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ADDRESSES.

THE CHAIRMAN'S ADDRESS.

Delivered in the Section of Diseases of Children at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY J. A. LARRABEE, M.D.,

OF LOUISVILLE, KY.

Gentlemen:—Again the bell has struck a warning note upon the horologe of time; again we have assembled for the purpose of contributing our mite to a science which can no longer be called "a conjecture," a science which challenges the admiration of the whole civilized world. Like a "Grand Army of Veterans" we meet around the campfire of the fortieth annual reunion of the American Medical Association. Permit me, then, to greet you as valiant captains of a mighty host of warriors, each bringing the trophies of successful battle with the common enemy of mankind. I see before me those who, amid frosts and snows of a northern winter, have fought the savage foe whose wolfish grasp lay at at the throat of the child; those who, beneath a semi-tropical sun, single-handed and alone have fought the pestilence, which walketh in darkness and which wasteth at noonday; those who, along the bold headlands of New England, have met the enemy "upon the storm-swept hill;" those who, upon the fertile plains of our western prairies, have fought long and hard with the hydra-headed monster of the soil. From the North and the South, from the East and the West we meet around the altar of legitimate medicine. Here we renew our obligations to science. Here we pledge anew our friendships and extend our acquaintance. Here, also, we cherish the memory of those who, having rested from their labors, their works do follow them.

The decade just ended has been conspicuous for the commemoration of historic events. Centennial anniversaries have been largely the order of the day, and we have been especially favored in that our meetings have been associated with these pleasant gatherings. Those among us who are so fortunate as to possess a record of revolutionary ancestry are especially congratulated. It is with commendable pride that we revert to the fact, which ought never to be forgotten, that in the long and perilous struggle for freedom, which laid the foundation of the great American nation, the noble profession to which we belong has always been in the front, not only of pioneer life, but also in true, self-sacrificing patriotism; that the title of Doctor of Medicine shines forth like stars in the emblazonry of our national escutcheon, from Joseph Warren, of Bunker Hill, to Hugh Williamson, of Camden, and from Lexington to Yorktown. But the ground upon which we meet to-day is still more precious to the historian. Not only does the pious, stern and relentless countenance of the Puritan rise up before us, but by the magic touch of the classic pen of our own Longfellow the cold and silent finger of the "skeleton in armor" is pointed backward through the dim vista of the ages.

I well remember that when I was a boy and sat upon the hard wooden benches of a little red New England schoolhouse my sympathies were always aroused by a picture in the leaves of a well-worn history. That picture represented a very small man with a very large hat and a very long staff, and behind him followed seventeen as forlorn and pensive-looking creatures as ever figured in print. It was Roger Williams and his adherents being driven by religious persecution and hatred to seek a home or to die in the wilderness of Rhode Island. It is to this wilderness that we have been invited, and to this wilderness we have come to participate, with a generous and hospitable people, in the celebration of the two hundred and fiftieth anniversary of its settlement. In this history there is certainly food for thought and for congratulation. For thought, that many of the most important advances which have been made in medicine and surgery have been met by persecutions scarcely less vigorous and criticisms hardly less cruel. Old John Talbot, for daring to recommend a new, nauseous and bitter drug for the cure of His Majesty's ague, is here to be remembered; also (within the recollection of living men) the ridicule and professional ostracism, by the erudite editor of a Philadelphia newspaper, of the quackish doings of the Boston doctors in using anæsthetics for surgical operations; and our own Ephraim McDowell would have been driven into the wilderness by foreign persecutors had he not already

been in one. Congratulation, that an enlightened civilization has so far increased our charity that we are enabled to pursue in peace a science which loves truth, invites fact and discards superstition; that we no longer live in dread of a "doctors' mob" against dissection or the gibbet for vaccination. What place, then, more fitting for the burial of professional animosities than this! "Pathists" but poorly become men who are searchers after truth. The broad title of "Doctor in Medicine" should be the only distinction of those who should have no other rivalry than a generous emulation of who can do the best work and best agree.

The reformer is abroad in the land. His presence is felt in all quarters, from the halls of Congress to the lyceum club, in the church, in the political convention, and from "woman's rights" to temperance; on all subjects and on all occasions he "bobs serenely up." It is not strange, then, that medical societies should form no exception to the general rule. In our meetings he seldom contributes to the scientific discussions—never reads a paper. Ethical subjects offer a peculiar and luring attraction, and to avoid complete obscurity he proposes certain changes in established customs, by-laws and constitution, rules and regulations which no one ever found any fault with, and which, in the harmonious course of affairs, few knew to exist. These individuals would change some law at every meeting, and were they to be so fortunate as to enter the heavenly kingdom, would propose to change the laws which regulate the universe itself.

Pediatrics is not a forced specialty in practice. It is not a branch torn from the tree of general medicine and forced to grow apart from the parent stem. The diseases of infancy and childhood, while they possess something (nomenclature) in common with those of adult life, differ so widely in course, duration and consequences that they require especial study. Very many excellent practitioners, appreciating their want of familiarity with infantile symptomatology, decline positively to attend to this class of practice; while many more, less honest in their convictions, continue the practice, although distasteful to them. Pediatrics presents to all an open field and a rich harvest of useful knowledge to all who will become earnest workers. Many of our medical colleges afford no adequate advantages for the medical student to become acquainted with a class of patients who may constitute two-thirds of a general practice. Shall this Section, so important and useful in its labor in the past, so full of work for the future, be united like a set of lectures in one of these colleges, thrown in at the end of a course of obstetrics? An opportunity will be given in the open session at this meeting for you to decide. From this Section the greatest possible good to the general practitioner may be expected. From its deliberations will originate wise and wholesome laws regulating matrimony, the propagation of healthful children, and the banishment from society of diseases worse than death. These, and many more considerations of equal importance, would seem sufficient plea for the separate existence of a Section in the purpose laid out by its distinguished founder.

Notwithstanding the year has chronicled a very decided advance in infantile therapeutics, the allegory of Addison—of the bridge of human life—still applies: "The pitfalls are still seen to be thickest near the entrance to the bridge." Infantile mortality from preventable causes is far greater than it should be. Your Chairman would venture the suggestion that a standing committee be appointed by the Section, whose duty it shall be to prepare a report upon vital statistics in infancy, said committee to be appointed each year, and said report to be read at a specified time in the meeting of this Section; statistics which shall constitute the basis of this report to be obtained from reliable mortuary reports of cities and towns, and also from the practice of those engaged especially in pediatrics.

In conclusion, gentlemen, it remains for me to express to you my appreciation of the high honor you have conferred upon me in calling me to preside over your deliberations. Esteeming, as I certainly do, the distinction you have placed upon me, I am also keenly sensitive of my own inadequacy. Wholly unversed in parliamentary usages, I beg your indulgence and request your kindly co-operation and assistance in the discharge of the duties which shall devolve upon the chair, that you may not have reason to regret your too partial choice.

ORIGINAL ARTICLES.

THE LEGAL RESTRICTION OF MEDICAL PRACTICE IN THE UNITED STATES.

Read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY PERRY H. MILLARD, M.D.,

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Gentlemen: In reviewing the subject of medical legislation, I am fully cognizant of encroachment of a subject most fertile in theory and suggestion, but quite devoid of illustrative beneficial results; a subject of vital importance to the public and profession, yet receiving but little aid and encouragement from either source in attempts at reforms. The history of medical legislation in this country shows, quite uniformly, that legislatures are quite apathetic when requested to enact

laws regulating medical practice, and are most loth to believe that the best interests of the public are subserved by such laws, many even asserting their belief that all legislation of this character savors of trades unionism. In our attempts at medical reform, the demeanor of the profession has likewise been most discouraging. We concede to all the right of conservatism, but deem it the duty of all good citizens to pass conscientious judgment upon all issues of vital importance in their chosen avocations.

The history of medical legislation is quite instructive. The United States is the only country among civilized nations devoid of adequate medical legislation; even the Chinese are protected by efficient medical legislation, and in our Scandinavian countries the minimum time of study is seven years. The history of medical legislation is most ancient. We ascertain by research that in 1237 the College of Salino instituted a series of regulations to the effect that no one should practice physic who had not studied philosophy three years and physic five, and had obtained the license of the College after undergoing an examination at the end of such period. Very similar regulations were shortly thereafter adopted by the English University, and the standard of medical knowledge and education was thereby considerably raised and a great impetus given to the pursuit of medicine. The first degrees in medicine were granted in 1384. We find by comparison that 150 years before degrees or diplomas were granted, the universities licensed to practice only after the candidates had pursued philosophy three years and physic five, and that 650 years thereafter 70 per cent. of the colleges of the United States only require two courses of lectures and three years of study. Fearing I may be charged with unfairness in my comparative illustration, I will direct your attention to the somewhat suggestive fact that all the colleges of to-day require that our boys be of good "moral character."

The first law regulating the practice of physic was enacted in 1511. The practice of medicine at this time was largely conducted by the ignorant portion of the artisan class. Medical degrees, however, were held in high esteem by the people. The progress of medicine in the seventeenth century has been ably pictured by Macauley in his "History of England," vol. 1, page 310. "Medicine," he says, "which in France was still in abject bondage, and afforded for Mollière an inexhaustible subject for ridicule, had in England become an experimental and progressive science, and every day made some new advance, in defiance of Hippocrates and Galen. The attention of speculative men had, for the first time, been directed to the importance of sanitary police. To that period belong the chemical discoveries of Boyle and the first botanical researches of Sloan. One after another, phantoms which haunted the world through ages of darkness, fled before the light, and astrology and alchemy became jests. Upon research I find that in ancient times medical legislation and higher medical education progressed hand in hand. Upon research, I am unable to find that any court or legislative body in the British Isles or Continental Europe ever questioned the propriety of effective medical legislation.

The experience of the various States in the United States is, however, suggestive. Previous to the present decade, no State in the Union possessed an efficient medical practice act. The laws in existence in the few States possessing the same were too inefficient to merit mention at this time. The most efficient of them only required the filing of a copy of a diploma with some office of record, generally a clerk of court or county clerk. Many of these diplomas were purchased outright, as was afterwards proven in the famous Buchannan diploma cases.

The first State to pass a law based upon rational principles was North Carolina. The efficiency of this act was practically emasculated, as the bill possessed no penalties. Among the earlier acts of the present decade were what was known as the Illinois Act. This act provided for the issuance of a license by submission of a diploma from a school of medicine recognized by the board. This act was, in my opinion, quite as radical as could have been enforced at the time of its enactment. The essential features of this bill were copied in the subsequent practice acts of Minnesota, from 1882 to 1887, Missouri, Iowa and West Virginia. The practice acts of the above-named States were retroactive in their features or provisions, and were applicable to upwards of 15,000 physicians. The gentlemen entrusted to execute the law in these States are the only persons that can actually recognize the obstacles and intolerable embarrassments encountered in the execution of the act in the above named States. We received most captious criticism and encountered formidable opposition from the sources we least expected, namely, the profession itself. This criticism and opposition did not come from the narrow-minded cynic alone, but, to the shame and disgrace of the profession, from a large number of our medical institutions, some of which, we regret to mention, were manned by men of eminence and great learning, but had carelessly, for financial reasons only, given cognizance to an opposition to a reform that was entitled to an undivided support and encouragement from every member of the profession from the Atlantic to the Pacific. Of the nine attempts to repeal the present Minnesota Medical Practice Act at the last session of the legislature of Minnesota, a majority of the professed amendments emanated directly from the medical colleges

themselves. The profession, gentlemen, is not cognizant of the great trials encountered in bringing about a fair degree of efficiency of the present inefficient acts. To John H. Rauch belongs the greatest credit in making the so-called Illinois Act efficient in different States. He is the true father of the coming reform, and we are only following in his footsteps. His influence in this matter has been most potent for good, and has directed the attention of both the profession and public of the great need of the present attempted reform. We trust he may be spared to witness a practical application of his labors. The States possessing quite ideal medical practice acts at present are, Minnesota, Montana, Virginia and North Carolina. The Minnesota Act is superior to that of the other States in that it requires that all persons desiring a license to practice shall have taken at least three courses of lectures of not less than six months' duration each. These requirements, in addition to the examination, make a tolerable safeguard for the public. In the future legislation by different States, I believe the profession can safely incorporate the main features of this act in their attempted legislation. It was drafted by me after five years' experience as executive officer of the former Minnesota Practice Act, and two years' successful operation in Minnesota has proven its merits. In the last two years this board has examined ninty-nine applicants for a license to practice and rejected thirty-five. All persons graduated since 1886 must furnish evidence of having attended three courses of lectures of not less than six months' duration each. As a result of this law, the sixty-four physicians that have been licensed to practice in Minnesota the last two years are nearly all graduates of McGill, University of Michigan, University of Pennsylvania, Chicago Medical College, and University of Minnesota. As an illustrative comparison, under the old Minnesota Act, which was the same as the present acts of Illinois, West Virginia, Missouri and Iowa, I licensed 146 physicians in 1885, and 280 in 1886, while the present board licensed sixty-four physicians from July 1, 1887, to July 1, 1889.

As a result of efficient medical legislation Minnesota possesses a smaller ratio of physicians to the population than any State in the Union. Instead of one physician to every 750 inhabitants, the last medical census shows but one to every 1,300. Through the courtesy of the Secretary of the Minnesota Board, I am permitted the first public announcement of these figures. I may state, however, that they are not made public with a view of promoting emigration. It is a pleasure to announce that both the profession and the public are quite uniformly supporting the law.

The profession is at present awakening to the necessity of efficient medical legislation. The fields are fertile and the harvest shall be plentiful; the handwriting is on the wall, and the interpretation is easily read. The people have awakened to the fact that there are twice as many practitioners of medicine in this country as are commensurate with its legitimate wants. The number being as one to every 750 in the United States; one to every 1,660 in Hungary; one to every 1,639 in Italy; one to every 2,932 in Austria; one to every 3,225 in Germany; one to every 3,780 in France, and one to every 7,909 in Sweden. The great number of medical men in this country makes competition very sharp, and, in consequence, people too frequently suffer from dishonorable practices. My own observation teaches me that the people of this country take too many drugs; this is particularly true of the American born citizen. The people are also cognizant of the fact that the methods of medical instruction in this country is deserving of severe censure.

The report of the Commissioner of Education of the United States shows that in 1886 there were but $2,671,490 in the grounds, buildings and apparatus of the 130 medical colleges of the United States. That the productive funds of the same were $266,193, and the annual income from investments only $22,000. Less than a dozen of these schools are in any way endowed. How best to prevent the flooding of this country with half educated medical men, is a vital question to both the public and profession at this time. After years of experience and observation in this country and Europe, I can unhesitatingly assert my conviction that our only remedy lies in efficient medical legislation. We are well aware that many of our medical colleges are honestly endeavoring to raise the standard of acquirements, and that in consequence their students have decreased in numbers and they have received but little encouragement at the hands of the profession itself. I believe that the adoption of a medical practice act in each State, possessing the features of the bill favored by the Commission on Uniform Medical Legislation, of which I have the honor to be Chairman, will afford the people and an overcrowded profession the much desired relief. This committee recommends to this Association for consideration, a bill calling for a State Board of Examiners to be appointed by the governor. A bill requiring that all persons commencing practice shall undergo an examination, at the hands of said board, that is both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine. Before being allowed to compete for a license by examination, the candidate must submit a diploma from a recognized medical college that requires a preliminary entrance examination upon the following named branches, to-wit.: English grammar,

composition, geography, history, arithmetic, algebra, physics and the natural sciences, together with at least one of the following languages: Latin, French or German. In addition a curriculum requiring attendance upon at least three full and regular courses of lectures before graduation, of not less than six months' duration each.

A bill providing that license may be refused or revoked for chronic inebriety, criminal abortion and gross unprofessional conduct. Also, that all licenses be a matter of public record by being recorded with a clerk of court or some officer of public record.

I believe, gentlemen, that the best interests of the public and profession will be subserved by efficient legislation, as recorded by this committee. Opposition at this time is evidence of a selfish motive, or a fatal weakness, if emanating from any special school of practice. Experience has proven that the so-called mixed boards have worked in harmony in the different States possessing the so-called Illinois Act, or rather the act recognizing a diploma as entitling the possessor thereof to registration. If a bill is passed by the different States calling for an examination of all applicants for a license, I can easily forsee a radical change in the character of instruction afforded by a majority of the medical colleges of this country. The reputation of colleges will not depend so much upon the number of students as upon the actual character of the instruction afforded the students. Such is the case in Europe, and should be the case in America.

In conclusion, gentlemen, let me bespeak for our noble calling a higher appreciation at the hands of the public. Our destinies are the product of our own action. I believe the future can be made more desirable than has been the past; as we sow, so shall we reap. I know it is in our power to afford the public a better profession, and realize that the best interests of the public will be subserved thereby. Let us endeavor to reduce the number of medical colleges, and, at the same time, raise the standard of instruction afforded.

DR. N. S. DAVIS, of Chicago, said that the subject of the paper was a most important one. The laws should be sufficiently harmonious in the various States to enable one, after once qualifying, to practice medicine in any State. They would be eligible to a license for practice in any other State without another examination. The objectionable feature of the Illinois State law is the fact that the diploma itself enables one to obtain license to practice. The medical colleges should be made to rival each other in the character of the work done by them. The student endeavors to get through his college work in the shortest possible time and at the least expense. From one-half to two-thirds of the students try to find the cheapest and easiest college. Teaching and licensing should be in separate hands. A high grade of preliminary education should be demanded. The State Board should be appointed by the governor with the concurrence of the senate.

DR. GIHON, U. S. N., was of the opinion that preliminary education is the most important consideration.

DR. SMART, U.S.A., accorded with Dr. Davis regarding the requirements preliminary to practice.

DR. SCAMMON, of Tennessee, agreed with Dr. Davis in the main, but thought the board should not be appointed by the governor, but be elected by the physicians.

AN ACT ENTITLED, AN ACT TO REGULATE THE PRACTICE OF MEDICINE AND SURGERY, TO LICENSE PHYSICIANS AND SURGEONS, AND TO PUNISH PERSONS VIOLATING THE PROVISIONS THEREOF.[1]

Be it enacted by the Legislature of the State of——

SECTION 1. The Governor shall appoint a Board of Examiners, to be known as the State Board of Medical Examiners. Said Board shall consist of nine members. The appointees shall be persons of recognized professional ability and honor. The term of office of said Board shall be three years, or until their successors are appointed; *provided*, however, that the members thereof shall be divided into three classes, each class to consist of three persons. The first class shall hold office under said appointment for one year, the second for two years, and the third for three years from the date of their appointment. It is further provided that no member of said Board shall serve more than two terms in succession. No member of any college or university having a medical department shall be appointed to serve as a member of said Board.

SEC. 2. Said Board of Medical Examiners shall elect a President, a Secretary and a Treasurer. It shall have a common seal, and the President and Secretary shall be empowered to administer oaths in taking testimony upon any matter pertaining to the duties of said Board. Said Board shall hold meetings for examinations at the Capitol Building of this State the first Tuesday of January, April, July and October of each year, and at such other times and places as the Board shall deem expedient. Said Board shall keep an official record of all its meetings; also an official register of all applicants for examination for a license to practice medicine and surgery in this State. Said register for license shall show the name, age and last place of residence of each candidate, the time he or she has spent in medical study, in or out of a medical school, and the names and locations of all medical schools which

[1] Copy of Act submitted by Committee on Medical Legislation, and read in the Section of State Medicine at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

have granted said applicant any degree or certificate of attendance upon lectures in medicine. Said register shall also show whether such applicant was rejected or licensed under this Act. Said register shall be *prima facie* evidence of all matters therein contained.

SEC. 3. All persons hereafter commencing the practice of medicine or surgery, in any of its branches, in this State, shall apply to said Board of Medical Examiners for a license so to do. Applicants for examination shall be divided into three classes, to wit: Persons graduated from a legally chartered medical school not less than five years before the date of application for a license; second, all other persons graduated from a legally chartered medical school, and medical students taking a regular course of medical instruction. Applicants of the first class shall submit to examination upon the following named branches, to wit: Materia medica and therapeutics, obstetrics and gynecology, practice of medicine, surgery and surgical anatomy. Those of the second and third classes shall submit to examination upon anatomy, physiology, chemistry, materia medica and therapeutics, histology and pathology, hygiene, practice of medicine, surgery, obstetrics and gynecology, diseases of eye and ear, medical jurisprudence, and such other branches as the Board may deem advisable. The questions for examination of applicants of the first and second classes shall be the same in branches common to both. Said Board shall not license graduates of later date than January 1, 1890, until satisfactory proof is furnished that the applicant has studied medicine and surgery three years before graduation; attended at least three full courses of medical lectures, of not less than six months' duration each; is of good moral character and over twenty-one years of age. Applicants of the third class, upon completion of two full courses of lectures, of not less than six months' duration each, can be examined upon the following named branches, to wit: Anatomy, physiology, chemistry, histology and pathology, and materia medica and therapeutics. If said examination is satisfactory to said Board, it may issue a certificate that the applicant has passed a final examination in these branches. All examinations shall be both scientific and practical, but of sufficient severity to test the candidate's fitness to practice medicine and surgery.

SEC. 4. All examinations shall be in writing, unless otherwise requested by applicant. In all oral examinations the questions and answers must be of a fundamental character and, except in therapeutics, such as can be answered in common by all schools of practice. If said examination is satisfactory the Board shall, provided that the applicant shall be at the cost and trouble of securing the presence of such dean or president, and that this shall not interfere with the regular conduct as to time and place of the examination, issue a license entitling the applicant to practice medicine in this State. The votes of all examiners shall be by yes or no and written, with their signatures, upon the backs of the examination papers of each candidate for the respective branches. A license shall not issue unless the applicant passes a satisfactory examination on at least two-thirds the branches required by this Act. Said examination papers shall be kept on file by the Secretary of said Board, and shall be *prima facie* evidence of all matters therein contained. All licenses shall be signed by the President and Secretary of said Board, and shall be attested by the seal thereof. The fee for examination shall be $15 for each applicant of the first and second classes, and $20 for each applicant of the third class. It shall be paid to the Treasurer of the Board and applied towards defraying the expenses thereof.

SEC. 5. The Board may, by a unanimous vote, refuse to grant or revoke a license for the following named causes, to wit: Chronic and persistent inebriety, the practice of criminal abortion, or for publicly advertising special ability to treat or cure diseases which, in the opinion of said Board, it is impossible to cure. In complaints for violating the provisions of this section the accused person shall be furnished with a copy of the complaint and given a hearing before said Board, in person or by attorney, and can finally appeal from the decision of said Board to the appointing power thereof.

SEC. 6. The person so receiving said license shall file the same, or a certified copy thereof, with the Clerk of the District Court in and for the county in which he or she resides, and said clerk of the court shall file said certificate, or copy thereof, and enter a memorandum thereof, giving the date of said license and the name of the person to whom the same is issued, and the date of said filing, in a book to be provided and kept for that purpose; and said clerk of the court shall each year furnish to the Secretary of said Board a list of all certificates on file in his office, and upon notice to him of the change of location or death of a person so licensed, or of the revocation of the license granted to such person, said clerk shall enter, at the appropriate place in the record so kept by him, a memorandum of said fact, so that the records so kept by said clerk of the court shall correspond with the records of said Board, as kept by the Secretary thereof. In case a person so licensed shall move into another county of this State, he or she shall procure from the clerk of the court a certified copy of said license, for which no charge shall be made, and then file the same with the Clerk of the District Court in the county to which he or she shall so remove. Said clerk shall file and enter the same with like effect as if the same was the original license.

SEC. 7. This Act shall not apply to commissioned surgeons of the United States Army, Navy or Marine Hospital Service, to physicians or surgeons in actual consultation from other States or Territories, or to persons temporarily practicing under supervision of an actual medical preceptor.

SEC. 8. Any person shall be regarded as practicing medicine or surgery, within the meaning of this Act, who shall append the letters M.D. or M.B. to his or her name, or repeatedly prescribe or direct, for the use of any person or persons, any drug or medicine or other agency for the treatment, cure or relief of any bodily injury, infirmity or disease. This Act shall not apply to dentists or midwives in the legitimate practice of these branches exclusively.

SEC. 9. Any person practicing medicine or surgery in this State without first having obtained the license herein provided for, or contrary to the provisions of this Act, shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punished by a fine of not less than $50 or more than $100, or by imprisonment in the County Jail for a period of not less than ten or more than ninety days, or by both fine and imprisonment. Justices of the peace and the respective municipal judges shall have jurisdiction of violations of the provisions of this Act. It shall be the duty of the respective county attorneys to prosecute violations of the provisions of this Act.

SEC. 10. All Acts or parts of Acts now existing not in accordance with the provisions of this Act, are hereby repealed.

SEC. 11. This Act shall take effect and be in force from and after its passage.

Signed:

PERRY H. MILLARD, *Ch'n*, St. Paul, Minn.,
HOSMER A. JOHNSON, Chicago, Ill.,
R. H. PLUMMER, San Francisco, Cal.,
C. W. DULLES, Philadelphia, Pa.,
GEO. H. BELT, Boston, Mass.,

Com. on Uniform Medical Legislation of the American Medical Association.

ON THE CONNECTION OF CHRONIC DISEASES OF THE UPPER AIR-PASSAGES WITH ABDOMINAL HERNIA.

Abstract of a paper read in the Section of Laryngology and Otology at the Fortieth Annual Meeting of the American Medical Association, held at Newport, R. I., June, 1889.

BY W. FREUDENTHAL, M.D.,
PHYSICIAN TO THE GERMAN POLIKLINIK, N. Y.

If it be true that "necessity is the mother of invention," then no period was more suitable for that great invention, the laryngeal mirror, than the present one.

The tendency of modern civilization is to imprison us closely within the walls of our cities and houses. As a result we find an increased tendency to the development of diseases of the air-passages, together with various less conspicuous sequelæ. As an example of these I may mention *abdominal hernia*. As regards the origin of ruptures caused by nasal affections, I made the following remarks before the German Medical Society of New York (Zur Aetiologie der Unterleibsbrüche. *N. Y. Med. Presse*, Oct., 1888): "If primarily we consider this question from a purely theoretical standpoint, nothing is easier than to prove the *possibility* of the origin of a hernia from an affection of the nose, in the same way as, long ago, it has been considered proven as the result of a bronchial affection. The force of the cough, pressing the abdominal contents against already non-resistable parts of the lower abdomen, increases the susceptibility to the formation of a hernial sac, and afterwards a hernia, and this is accomplished by intensified and oft-repeated action of the intra-abdominal pressure."

Intra-abdominal pressure has played a great rôle in former years, especially in Germany. Modern surgeons have again rescued it from oblivion; into which it seemed to have fallen. Already in Rust's "Handbuch der Chirurgie" (vol. 8, pp. 360 ff.) we read that even when a hernia at last suddenly appears, after a more or less violent exertion, still its origin has been prepared by oft-repeated pressure of the contents through a slow but long continued dilation of the peritoneum.

A further practical use of this idea was made by Friedberg (Vierteljahrschr. f. prakt. Heilk. Prag. 1864), who showed the connection between the origin of herniæ and congenital phimosis in boys. The patency of the processus vaginalis peritonei can not, according to him, be a sufficient cause for the origin of herniæ, as this has been found open in many cadavers without a hernia being present. Still, however, this can give the predisposition which only awaits some exciting cause to produce a hernia. This idea of the origin of a hernia from a marked case of phimosis has, of late, been taken up and is held by quite a number of writers, especially by Kempe, Osborn (who also gives an explanation for the greater frequency of right-sided herniæ in infants), Hans Schmid, and Karewski. Now, compare the pressure upon the abdominal contents induced by a phimosis, with that of chronic diseases of the upper air-passages. "When the nasal secretion is normal, the pressure upon the abdominal contents is so slight that it need not be regarded. When, however, ... pathological changes take place .... then the expiratory straining to remove the pent-up secretions increases with the constant and ever changing inability to get rid of it." [See above cited paper.] The expiratory efforts must, therefore, become very strong and continuous. A man with hypertrophy of the turbinated bodies, or with a nasal catarrh, or with a strong pharyngitis granulosa, will hawk, clear his throat

and blow his nose under certain conditions all day long; or, in other words, he will constantly increase the intra-abdominal pressure. A child with a phimosis will do this at the most once every hour and, as I think, in a manner relatively much weaker.

If we examine this theory somewhat more closely, the question which everybody naturally will ask is this: Is there a greater frequency of herniæ in countries where nasal diseases abound? The *N. Y. Med. Record* answered this in the negative, and affirmed that in Germany 82 out of 1,000 conscripts are rejected on account of hernia, in France 65, in Italy 76, while in the northern army only 50 were not taken on account of hernia, although nasal diseases in the United States are extraordinarily common. I refuted these statements by publishing complete statistics of the Austro-Hungarian monarchy, as a substitute for the German, from whom statistics could not be obtained, and came to the conclusion that *the ratio of North America, a country much troubled by nasal diseases, to Austria, much less infested with them, is as 50 to 14. In other words: Hernia is in the United States three and a half times as frequent as in Austria.*

Reasoning from analogy I conclude that in Germany 82 out of 1,000 are not rejected on account of hernia. I shall to-day give you the contents of a table to which my attention was kindly called by the director of the Kaiserliches Gesundheitsamt in Berlin.

It is as follows (Veröffentl. des K. Gesundheitsamtes, 1887):

Year.	Were examined in the Departments of the 1–15th Army Corps.	Rejected, ratio per 1,000.
1876	786,054	128.2
1877	782,482	114.1
1878	822,412	105.6
1879	857,374	110.0
1880	875,480	109.3
1881	864,812	90.1
1882	851,801	85.8
1883	869,572	78.7
1884	884,250	76.7
1885	900,849	74.3

Average for the ten years, 96.6.

According to this average, therefore, there were rejected out of 1,000 conscripts, on account of *physical and mental defects of all kinds, altogether 96.6*; in the last four years (1883–1886) even less than 80. That we, therefore, should meet with such a high average (as 82) for the ruptured alone, is by no means correct. In my opinion the proportion ought to be even more favorable than in Austria; for, as a statistical report of the Royal Bavarian Ministry of War of the year 1883 shows (Zeitschr. des K. Bayerischen Statist. Büreau, München, 1884), there were rejected, "on account of infirmities of the abdomen (mostly ruptures)," 1.4 per cent., or 14 per 1,000. If we subtract the less frequent other abdominal diseases, we get for herniæ alone a number that is decidedly below 14. As these proportions in the other parts of Germany are alike, perhaps even better, we may conclude, with a probability bordering on certainty, that also in Germany, in accordance with the less frequent occurrence of nasal diseases, herniæ are found only one-third or one-fourth as often as in the United States, the country of nasal diseases, κατ' ἐξοχήν.

Concerning Italy and France, I have received, through the kindness of both consulates at New York City, more accurate data.

In Italy, where people do not suffer much from nasal diseases, the figure was said to be 76. In reality the conditions are as follows:

Males of 20 years rejected from military service for abdominal hernia:

Year.	Number of those called, exclusive of those rejected for defects of stature.	Rejected for hernia.	Ratio per 1,000.
1858	250,699	4,052	16.2
1859	270,304	4,282	15.8
1860	224,340	4,401	18.0
1861	254,867	4,264	16.7
1862	273,064	4,506	16.5
1863	303,423	5,080	16.7
1864	297,742	4,796	16.1
1865	304,559	5,026	16.5
1866	317,031	5,260	16.6
1867	301,769	5,129	17.0

Average for the 10 years, 16.61.

France also has not, as was affirmed by the *Record*, 65 per 1,000, but only the following figures:

Ratio per 1,000: Year 1879, 23.2; 1880, 22.1; 1881, 21.3; 1882, 22.3; 1883, 22.9; 1884, 22.7; 1885, 23.2; 1886, 24.1; 1887, 23.2; 1888, 23.9; average, 22.89.

Thus we find the relations exactly as we expected to find them. In Italy, where, at least as far as I know, nasal diseases are less frequent than in France, out of 1,000 conscripts 16.61 are rejected on account of hernia; in France, on the contrary, 22.89. As these data furnish another proof for our theory, I could not omit bringing them in addition.

As you are perhaps aware, I furthermore tried to prove that where *nasal diseases decrease*, the *number of ruptures* must *also be diminished*. I based my statements especially on the results of the excellent investigations of Bryson-Delavan (*N. Y. Med. Journal*, November 12, 1887), who, in accordance with the experience of Zuckerkandl, E. C. Morgan, F. Donaldson, Jr., J. N. Mackenzie and others, has proven that among primitive types deformities of the septum are very rare. On the other hand I showed that these races, at the same time, have but very rarely a hernia, and I called attention to the report of the Provost Marshal-General, that none of the 121 Indians drafted in the last war had a hernia,

and none nasal trouble. These conclusions were, according to my knowledge, opposed by nobody.

Not quite the same happened as to the third question at issue. I finally tried to show that just those people are especially prone to hernia who are least exposed to inclement weather, leading a sedentary life, and who surely have not to carry or to lift heavy burdens. In support of my affirmation I then cited the report of the Provost Marshal-General again (Statistics, Med. and Anthropological, of the Pr. M. Gen.'s Bureau, etc., by J. H. Baxter, Washington, 1875).

In this report we have a tabulated statement of the frequency with which hernia occurs among men engaged in seventy-five varieties of occupations. The smallest percentage is found among soldiers, namely 28.8 per 1,000. Next to them come the tanners and curriers, coppersmiths, students, iron-workers, etc. The latter (iron-workers) show the very interesting number 32, while inn keepers, whose occupation, in proportion to these, can be called an extremely easy one, reach the highest point, namely 101.5 per 1,000. To the same category belong editors, engravers and others, whose percentages range from 95 to 98 per 1,000, and who are by no means as much strained physically as soldiers, coppersmiths, sailors and the like. Tanners and curriers show the number 29.4, while teachers have almost twice the number, viz: 56.6; and dentists, who remain indoors almost the whole day, show even 79. From these data I thought myself correct in drawing the conclusion that people who, through some special kind of occupation, are apt to acquire a post-nasal catarrh, or other diseases of the upper air-tract, are more subject to hernia than others.

To this Dr. Schapringer, in a review published in the *Monatsschr. f. Ohrenheilkunde*, Jan., 1889, replied that people suffering from hernia at the time of selection of their trade never elected to become smiths or the like, but rather engravers, etc. It would, therefore, be the hernia that created the engraver, and not vice versa, the business of an engraver that produced a hernia. Dr. Schapringer, furthermore, thinks that the above tables are of a doubtful value as long as they do not contain details about the first appearance of the herniæ. Now, gentlemen, I can not fulfil his desire, nor do I even think it necessary, as we have statistics about the time of the first appearance of a hernia in great abundance.

According to consonant investigations made by the most prominent writers on this subject (Malgaigne, Cloquet, Kingdon, Wernher, Albert, etc.), it is stated that in males hernia occurs most frequently between the thirtieth and fortieth years of life. What does this fact mean? It teaches us the following: A young man, after having chosen his occupation, which, as a rule, takes place in his twentieth year, or even before that time, and after having followed this occupation say for ten years, certainly shows by this time the primary effects of such occupation. A soldier, a coppersmith or an iron-worker will have developed his whole muscular system completely by this time—he will rarely show a tendency to catarrh; hence a greater rarity of herniæ. A tailor or an engraver, on the other hand, you will be able to recognize easily from the debility of his constitution. *He has* already, especially in a climate favorable to it, a post-nasal catarrh, hypertrophied mucous membranes in the nose, etc., etc.; and he has *also*, in a proportion by far surpassing the other occupations, hernia. We see, therefore, that it is the occupation which creates the hernia, and not vice versa.

Allow me to mention briefly two more facts in corroboration of this. I have before demonstrated that from the soldiers of the German army, in spite of their hard physical training, the average of those rejected for hernia is not more per year and per 1,000 than 1.05. As I, however, know now—my tables, I am sorry to say, are not so complete as to be published—the proportion is such, that with the increasing age of service the frequency of hernia decreases. Thus we see that bodily straining, gymnastics, out-of-door exercises, etc., can be considered as the *best prophylactics against herniæ*.

It was, furthermore, said that in mountainous regions ruptures are more common than in low countries, and this supposition was based on the belief that the labor in ascending the mountains must increase their frequency. The only author whom I am able to cite on this subject is no less an authority than Malgaigne. According to his statements, however, in France the reverse is the case, since just in the mountainous parts ruptures are infrequent, while they are quite common on large plains and *on the shores of the rivers*. We see, therefore, that just where the humidity of the climate is able to cause many nasal troubles, again the herniæ are increased in frequency.

According to my personal experience, which, however, was not exactly directed to this question, I can only say that I have seldom seen so few herniæ as I met while in mountainous regions.

Another question to which I would allude is this: How is it that herniæ are more common in males than in females? The explanation which I have to offer is that while the intra-abdominal pressure is increased in men and women by coughing, the efforts are more violently performed in the case of the former.

In view of all these proofs which I advanced, I hope you will find some truth in my theory, and I shall not try your patience with enumerating a number of less important facts which are in favor of this theory. In concluding my paper, which I have read upon the kind invitation of your Secretary, allow me only to collate the results of my observations up to date:

1. Of 500 ruptured, *ad hoc*, examined by me (*Monatsschr. f. Ohrenheilk.*, November, 1887, f. f.) there were found 143 with strong diseases of the upper air-passages that made surgical interference absolutely necessary.

2. Among about eighty members of a family also examined by me (*loc. cit.*), almost all had diseases of the upper air-tract, and one-third had herniæ.

3. Where nasal diseases are less frequent, there, as we have seen, also less herniæ are found (see Indians).

4. According to the frequency of diseases of the upper air-passages, hernia was found, of each 1,000 conscripts in the United States, in 50; in France, in 22.89; in Italy, in 16.61; in Austro-Hungary, in 14.09, and in Germany probably in even less than 14 per 1,000.

5. Hard physical work, ascending mountains, lifting of heavy loads, etc., never give the *predisposition* to herniæ; but, on the contrary, such occupations which involve diseases of the upper air-passages.

6. In women herniæ are rarer than in men, on account of the weaker stress used in pressing down the intra-abdominal contents during the act of hawking, clearing the throat, and the like.

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DIAGNOSIS AND TREATMENT OF ABSCESS OF THE ANTRUM.

Read before the Section of Laryngology and Otology, at the Fortieth Annual Meeting of the American Medical Association, at Newport, June, 1889.

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The antrum is that triangular-shaped cavity in the superior maxilla, sometimes found extending into the malar bone forming a second cavity. It is lined by mucous membrane continuous with that of the nose, and it is occasionally thrown into folds forming partial septa, a fact of considerable clinical importance. It varies in size according to the age and sex of the individual, being small in children, and larger in the male than in the female. It diminishes in size in old age and after the loss of the teeth.

Of the surgical affections of the antrum, suppurative inflammations play the most important part. Until within recent years abscess of the antrum was regarded as rather an uncommon affection, but we now know that it exists much more frequently than was formerly supposed. It occurs generally after the second dentition; although there is one case recorded by P. B. Pedley,[1] of a girl 8 years of age, where the abscess was due to caries of a temporary canine tooth.

Among the causes of abscess of the antrum may be enumerated: 1. traumatism; 2. the acute infectious diseases, such as measles scarlet fever and smallpox; 3. syphilis; 4. an extension of the inflammation from the lining membrane of the nose; 5. extension of the inflammatory process from the suppurating pulp of a tooth resulting from dental caries. Authorities differ as to the most common of these causes. Zuckerkandle, for example, believes that it is more often due to an extension of the inflammation from the nose; while others regard disease of the teeth the principal factor in the etiology. I am of the opinion that the form of inflammation of the antrum characterized by a sero-mucous secretion, and known as *hydrops antri*, is the result of an extension of a catarrhal inflammation of the nose. On the other hand, that form which is more chronic in character, and is accompanied by a muco-purulent secretion, is the result of an extension from the teeth.

The under surface of the antrum is separated from the alveolar process by a thin lamella of bone, which is formed with the development of the permanent teeth; occasionally, however, it is absent, and the roots of the teeth are then likely to extend into the antral cavity. Its floor is in close relation to the roots of the first and second molar teeth; and when the cavity is unusually developed the roots of the first and second bicuspid teeth are brought in contact with it. Lying in such close proximity to the floor of the maxillary sinus, the teeth when diseased are likely to transmit the septic process there, and set up a suppurative inflammation.

The symptoms of this affection vary with the intensity of the inflammation. In a few cases there is distension of the walls of the superior maxilla and swelling of the cheek of the affected side; pain in the infra-orbital region, and at the inner angle of the orbit; tenderness on pressure over the canine fossa, and occasionally a crepitating sensation imparted to the fingers, due to a springing of the distended walls of the antrum; a narrowing of the field of vision, due to pressure on the floor of the orbit, a symptom, according to Ziem, much more frequently associated with affections of the ethmoid cells, and a valuable point in the differential diagnosis between abscess of the antrum and of the ethmoid cells. In some cases there is a discharge of fetid pus from the nose, generally unilateral and of long standing. Long continued secretions of pus from the nose, especially when confined to one side and associated with caries of the molar teeth, should always direct our attention to the antrum as the source of the trouble. A suppurative inflammation of the nose is an extremely rare affection. Stoerk has described such a disease, occurring as an epidemic among the Gallician Jews.[2] It may, however, occur from infection, as for example, from gonorrhœal poison.

[1] Lancet, Feb. 16, 1889.

[2] Krankhieten des Kehlkopfes, p. 161.

There are four possibilities, after eliminating wounds, and inflammations following the acute exanthemata that may give rise to pus in the nasal chambers: 1. foreign bodies, including nasal polypi; 2. diseases of the bones; 3. secretion of pus from the antrum of Highmore; 4. secretion of pus from the frontal sinus and from the anterior ethmoid cells. The secretions from the anterior ethmoidal cells may enter the middle meatus, along with those from the frontal sinus, through the infundibulum, while the secretions from the posterior cells find their way into the pharynx along with those from the sphenoidal sinus.

If the pus should continue to flow after the removal of the polypi, or foreign body, we are then likely to have either an abscess of the maxillary sinus, of the frontal sinus, or of the ethmoid cells. Occasionally it is difficult to differentiate between these, for in each case pus is found in the middle meatus extending along the inferior border of the middle turbinated bone. When this body is sufficiently contracted, which can be accomplished by an application of a 20 per cent. solution of cocaine, the middle meatus will be brought into full view, and pus found in the hiatus semi-lunaris. If it is not possible to bring about the contraction of this body by cocaine, then the hypertrophied or swollen tissue should be destroyed by means of the cautery, or chromic acid. The opening of the frontal sinus will be found just below and in front of the ostium maxillare in a funnel-shaped depression—the infundibulum. Owing to the close proximity of these two openings it is very difficult to discover from which the pus flows. Hartmann, of Berlin, has suggested the following device to ascertain the source of the secretions: After drying the parts thoroughly with absorbent cotton, he drives a blast of air through the affected nostril by means of a Politzer air-bag. By this procedure he claims to be able to aspirate the pus from the sinus and thus discover its source. Another point in the differential diagnosis is that abscess of the maxillary sinus is of comparatively frequent occurrence, while that of the frontal sinus is rare.

The most positive means of differentiating between these two affections, is by making an exploratory puncture, as suggested by Moritz Schmidt.[3] He places a small pledget of cotton saturated with a 20 per cent. solution of cocaine under the inferior turbinated body, about its middle, and allows it to remain in until the parts are thoroughly anæsthetized; then raising the end of the turbinal body, he pierces the thin wall of the antrum with a sharp-pointed and curved syringe. The point of the instrument should be not too fine, so that it will bend or break when making the puncture. There is no pain following the operation and it is entirely devoid of danger. This little instrument should be employed in all doubtful cases, and its use will, I think, tend to prove that the affection is much more common than is generally supposed. The indications for treatment are to let out the pus and drain and disinfect the cavity until the inflammation subsides. If the abscess should point anywhere it should be evacuated at that place.

A great deal has been written recently with regard to the surgical treatment of these cases, and it is interesting to note the tendency on the part of modern surgeons to deviate from the well-tried practice that has stood for nearly a century, and to return to the original suggestion of John Hunter, and the practice of Jourdain—to evacuate these abscesses through the nose.

For nearly a century the practice has been to enter the antrum from the mouth. The operation that has met with the most favor is that known as Cooper's—through the alveolar process. In case a molar tooth is present it should be extracted and the opening enlarged; or if, as frequently happens, the tooth has been extracted at some previous time, the alveolar process should be perforated at that point. This is best done by means of a small trephine, attached to a surgical engine, or to the electric motor. The instrument should be directed slightly forwards and inwards. This operation has the advantage: 1. that of draining the antrum at it most dependent part, and that the cavity can be readily cleansed by syringing; 2. that it can be performed without the aid of an anæsthetic—a few drops of a 4 per cent. solution of cocaine injected into the gum being sufficient to completely anæsthetize the parts. Its disadvantages are: 1. the liability of food and bacteria from the mouth to enter the sinus and assist in keeping up the suppuration; 2. the occasional necessity of extracting a sound tooth.

If the front wall of the antrum should bulge forward in the canine fossa, then the operation known as Desault's should be performed—resecting a small piece of bone from the fossa. Other surgeons have opened the antrum through this fossa by means of a trocar, and Fergusson recommended an ordinary carpenter's gimlet.

Another operation through the mouth is that devised by Bertrandi, who opened the antrum through the hard palate, when a slight bulging of that bone showed a tendency on the part of the abscess to open at that point.

Hartmann, of Berlin, revived, in 1884, a method proposed by Jourdain in the early part of the present century, of washing out and disinfecting the antrum through its natural opening, the ostium maxillare, in the middle meatus. This procedure is also recommended by Stoerk, and they claim to have cured a number of cases in this way. The disadvantages of this procedure are great and the results so uncertain that it will never be

[3] Berl. Klin. Wchschr., Dec. 10, 1888.

generally used; for the antral opening in the middle meatus is situated so far above the floor of that cavity that it cannot be thoroughly drained, and it would be impossible to wash out through a tube of small calibre the thick colloid secretions that are so often found in these abscesses.

The antrum is a pneumatic extension of the nasal chamber and communicates normally with it. When for any reason this communication is shut off the operation that would restore its natural condition would seem the most rational one to select. Jourdain opened this sinus through the infundibulum, in the middle meatus; but this operation never became popular, because, owing to the high situation of the point selected for making the opening, it was difficult to perform it. It is, moreover, not unattended with danger, owing to the possibility of wounding the floor of the orbit.

Mikulicz advises that the antrum be opened through the lateral wall of the nose at a point where it is thin and easily perforated.[4] He uses a special instrument for the purpose, which consists of a sharp, double-cutting knife attached to a handle bent at a blunt angle. It has a flange, so as to prevent its being shoved in too deep. The parts having been thoroughly anæsthetized with cocaine, the instrument is passed into the nose, and when about the middle of the inferior meatus, it is turned outward and by firm pressure is made to penetrate the thin wall of the sinus. By a to and fro movement the opening can be made as large as desired.

This operation has the advantage of draining the cavity at its floor, and the opening being easily accessible it can be readily syringed out; the secretions pass through the nose, instead of into the mouth, and there is little danger of the entrance of foreign particles into the antrum to keep up the suppuration. This operation is, however, not practicable: 1. when the nasal chambers are of abnormally small calibre; 2. when there is a deflected septum; and 3. when there is marked hypertrophy of the inferior turbinated body. The principal disadvantage of the operation is that it leaves a ragged edge in the wall of the antrum, against the margins of which the nasal secretions are caught, and becoming dried and hardened may cause an ulceration when an attempt is made to remove them.

The local treatment is very important, the successful issue of the case depending largely upon the solutions used, and the care with which they are applied. The cavity should be irrigated or syringed gently with mild disinfecting and stimulating lotions daily until all suppuration has ceased, when the main opening may then be allowed to close.

The fetor that almost invariably accompanies these conditions is best overcome by means of a solution of permanganate of potash, after which the cavity should be syringed with a weak solution of common salt and carbolic acid. If the solutions are applied through an opening in the alveolar process, great care should be exercised not to drive them too forcibly against the roof of the cavity, for by so doing distressing pain may be produced in the eye.

This treatment will, in many cases, be all that is required; but in the more obstinate forms of inflammation the local application of the peroxide of hydrogen will be found very efficacious; or, better still, glycozone, a mixture of the peroxide of hydrogen and glycerine. In this preparation we have the combined effect of the glycerine, which abstracts water from the lining membrane of the cavity and keeps it constantly flushed, and the peroxide, which destroys its septic contents and, at the same time, stimulates the inflamed membrane to healthy action. The following are notes of four interesting and instructive cases that have come under my observation:

Case 1.—Mrs. E. presented herself for treatment March 3, 1887, giving the following history: She has had frequent attacks of coryza, and for a number of years has suffered from hay fever. Two years ago she had considerable trouble with the second molar tooth in the upper jaw on the left side, which the dentist broke in attempting to remove it, leaving the roots in the gum, and they, from time to time, have caused her pain. About a week prior to consulting me she caught a severe cold at a funeral; since then she has suffered intense pain in the face and in the ear; for several days there has been a watery discharge from the nose. Examination: The left side of the face is very much swollen, and there is some distention of the anterior wall of the superior maxilla; pressure upon the affected side of the face is very painful and gives a crepitating sensation to the fingers; the nose is tightly blocked on the left side, the right side partly open; the first and second biscupid teeth are absent on the left side, the roots of the second molar remaining and deeply imbedded in the gum; the remaining teeth are in good condition; secretions from the nose are watery in character; examination of the left ear shows a small fistulous opening in external auditory canal just under the annulus tympanicus, about midway of its anterior inferior quadrant, but having no connection with the middle ear; mt. normal in color; hd. $\frac{2}{2}\frac{1}{1}$.

On March 4th I perforated the antrum through the canine fossa by means of an ordinary trocar and inserted a Knapps mastoid drainage tube, small size. There was a profuse muco-purulent flow following the operation. The cavity was washed out with a warm solution of common salt and carbolic acid. After the third syringful had

[4] Archiv. für Klin. Chir., Berl., xxiv, 626.

been injected the solution passed out of the nose. There was little or no odor present. This treatment was pursued daily for ten days, when the secretions ceased entirely. The drainage tube caused some irritation in the cellular tissue of the cheek, and was removed at the end of the seventh day. Two days after the operation the nose opened on both sides, so that a rhinoscopic examination could be made. The mucous membrane of the left side was deeply congested and very sensitive, the mildest applications causing paroxysms of sneezing. There was also an ulceration of the septum about the size of a silver three-cent piece, laying bare the cartilage. By the use of detergent sprays the inflammatory condition subsided, and the application of a solution of nitrate of silver (gr. v, ad. ℥ j) to the ulcer caused it to heal, completely covering the cartilage.

Case 2.—Mr. ——, U. S. N., presented himself in the spring of 1888, complaining of a naso-pharyngeal catarrh of long standing, and stated that he was sceptical as regards a cure. He complained principally of a profuse secretion of the nose, and when in the reclining position the secretions dropped into his throat, causing him great annoyance.

On examination the inferior turbinals on both sides were markedly hypertrophied, so much so that no satisfactory examination of the upper part of the nasal chambers could be made. The septum was slightly deviated to the left in its upper part. The vault of the pharynx was bathed with a white secretion, but there was no swelling or hypertrophy in this region. The hypertrophied tissue was reduced on both sides by means of the galvano-cautery and chromic acid. The left middle turbinal body was then found enlarged, leaving only a fissure between it and the deflected septum. Pus was found in this fissure and in the middle meatus, reappearing as soon as it was wiped away with absorbent cotton.

Upon further inquiry he stated that in 1867 he had some trouble with the second molar tooth in the upper jaw on the left side. The nerve was killed and the tooth filled without removing the dead pulp. After suffering for two years with frequent small abscesses around the tooth the filling and the decomposed tissue were removed. He dates the nasal discharge from six months after the first filling was put in. He has never had any pain in the face, but it is somewhat fuller on the affected side. The nasal discharge has been constant and very annoying.

Being unable to decide whether there was an abscess of the ethmoid cells, complicating the antral condition, the case was referred to Prof. Harrison Allen, who diagnosed an abscess of the maxillary sinus. At this point my relations to the case terminated, for he was transferred to his attending physician, Dr. Rixey, U. S. N., through whose courtesy I am allowed to continue the report of the case.

The second molar tooth was extracted and found badly ulcerated at its roots, the opening in the alveolar process was enlarged and the cavity syringed with warm, disinfecting solutions, bringing away a great quantity of very fetid pus and mucus. The treatment has been carefully carried out under Dr. Rixey's direction with marked improvement in his condition. Although there is some secretion still, sufficient to require the cavity to be washed out once a day, he is comparatively comfortable. He wears a gold tube in the alveolar opening, covered by a plate, so as to prevent any of the secretions passing into the mouth.

Case 3.—Mrs. P., admitted Sept. 10, 1888, complaining of a fetid discharge into the mouth through an opening left by a recently extracted tooth. She gave the following history: For a number of years she has been afflicted with nasal catarrh, for which she received treatment from numerous physicians without any benefit. About three years ago the secretions from the left side of the nose became so profuse that her life has been a burden. She frequently complained of toothache, and a week ago she had the second molar tooth on the left side extracted. Since then the nasal secretions have greatly diminished, but a great quantity of foul pus is passing constantly into the mouth. She complains of constant nausea and loss of appetite, and is obliged to mop the gums constantly, so as not to swallow the pus. There has never been any swelling of the face, and the patient does not recall having had any tenderness on that side of the face. Present condition: She has an anxious expression; complexion sallow; tongue furred; pus was observed flowing freely from the opening in the gum; a probe passed readily into the antrum; no swelling or pain on pressure on the affected side of face. Examination of the nose shows a collection of thin pus in the middle meatus along the lower border of the middle turbinal on the left side; the right side shows no abnormal condition.

The opening into the antrum was enlarged and the cavity syringed with a solution of permanganate of potash. Immediately there came from the left side of the nose a great quantity of fetid and dark green pus, partly fluid and some of thicker consistency. The odor was almost unbearable. The cavity was washed out daily with a solution of common salt and carbolic acid for nearly three weeks, when the discharge ceased entirely and the opening into the antrum was allowed to close.

Case 4.—Capt. ——, U. S. A. First seen Feb. 1, 1889. Complained of nasal catarrh, from which he has been suffering for a number of

years. When a cadet at West Point the nerve of the left second molar tooth was killed. Two years later the tooth broke off and a piece of raw cotton was taken out of it in a very fetid condition. He never had any trouble with his nose prior to that time. There has always been more or less pain in the left side of the face since the tooth was filled. About two years ago the secretion of pus from the nose became very annoying, dropping back into the pharynx when he is in the reclining position.

Examination shows the left side of the face to be somewhat fuller than the right. There is a suffusion of the conjunctiva of the left eye which has existed for some time. The second molar tooth in the upper jaw on the affected side is absent; the other teeth are in good condition. There is a thin purulent secretion from the left side of the nose, which is most abundant in the middle meatus; it recurs rapidly after removal. The mucous membrane on the affected side of the nose deeply congested. The alveolar process was opened by means of a small trephine, 3 mm. in diameter, attached to a surgical engine, the gum having been previously anæsthetized by the injection of a few drops of a 4 per cent. solution of cocaine. The cavity was readily reached, and it was then syringed out with a warm solution of bicarbonate of soda. A great quantity of fetid pus, mixed with a thick yellow colloid mucus, came out through the nose. There was some bleeding following the operation, but that soon ceased. The antrum was washed out daily for ten days with a solution of common salt and carbolic acid, when the odor ceased, but with little effect on the quantity of secretion of pus. The treatment was then changed to a solution of boracic acid, with no marked improvement following. One application of a solution of bichloride of mercury (1-2500) was made, but owing to the severe pain it caused it was not tried again. I then used a solution of the peroxide of hydrogen with some benefit, but as the improvement was not as rapid as could be desired I was advised to try glycozone. Each application was followed for several hours afterwards by a profuse watery discharge from the nose. The improvement, after the use of this application, was marked from the outset, and in ten days after its first application all suppuration had ceased, the opening in the alveolar process was allowed to close, and the patient was discharged cured.

My experience with glycozone is limited, and I can only judge of its efficacy in this one case; but it seems to me to possess advantages that we have long been in need of in treating these chronic abscesses of the maxillary sinus.

DR. J. O. ROE said: It is my opinion, based on my own experience, that abscess of the antrum is more often caused by diseases in the nose than by diseases of the teeth. I can now recall eight cases of abscess of the antrum that have come under my care. In four of these cases the abscess was caused by, or associated with, nasal polypi, and there was no disease of the teeth. In three of the other cases the disease was associated with, and apparently caused by, dental caries. In two of the four cases associated with nasal polypi the abscess was not suspected before the polypi were removed, the fetid discharge being attributed to retained secretion that had become decomposed. In every case there was more or less nasal disease. In the study of these cases I concluded that the nasal difficulty had a marked influence in the production of the disease in the antrum; first by the irritation in the nose, causing a turgescence of the lining membrane of the interior of the antrum; secondly, by the direct extension of the disease from the nose into the antrum over the continuous surface, and thirdly, by closure of the nasal opening into the antrum by the disease in the nose, thereby causing a retention of the discharge excited by the congestion or disease in the antrum.

DR. LIPPINCOTT was under the impression that purulent disease of the antrum was frequently due to morbid conditions of the teeth. Abscess of the orbit not infrequently has for its *raison d'etre* a suppuration process originating in the antrum; and in a large proportion of orbital abscesses arising in this way the primary cause has been dental caries.

DR. E. FLETCHER INGALS, of Chicago, had treated several cases of the kind. One had been cured after about three weeks' treatment, having been washed out repeatedly with peroxide of hydrogen through the normal opening into the nasal cavity. However, he had three cases under observation where every form of treatment had been inefficient in checking the purulent discharge. They had worn tubes in the alveolar process for periods of five, three and two years respectively, and in neither did there appear to be any dead bone, as the discharge was not offensive. He thought that an opening at least 8 mm. in diameter should be made, to allow the introduction of a tube and free discharge.

DR. DALY, of Pittsburg, President, said he had had some experience in the disease of the antrum referred to in the paper just read, and had written a paper upon a series of such cases, which he read before the American Laryngological Association some eight years ago. He was in the habit of opening the antrum through the alveolar process. A surgical engine is not necessary for this. He had once gone into the antrum through the socket of a tooth by means of a small bevel-pointed screw-driver belonging to a gun case. It ought to be borne in mind, however, that the operation is not without danger. One of the brightest men that has ever adorned the Ameri-

can medical profession died a day or two following an operation on his antrum—a man whose teachings have since become regarded as revelations made far in advance of his time and profession. I refer to the late Dr. Beard, of New York. The surgeon who operated on Dr. Beard gave me, shortly after, an account of the operation, which was done with his customary care and skill. The opening was large and made into the antrum by means of the dental engine. Within twenty-four hours after the patient had a chill and other symptoms of septic infection, and died, creating an irreparable loss to the medical profession. The after treatment is necessary to be continued with the utmost care and asepticism for a long time, and not among the least useful and efficient cleanser is one that is nearly always at the hand of the patient, wherever he may be. I refer to soap and water. The third case upon which I operated went to the far West after a few weeks' care, having with him a prescription for an antiseptic fluid which was ordered to be used several times a day. The patient lost the bottle, or broke it, and as a *dernier ressort* used soap and water, found it efficient and continued it until the discharge ceased at the end of six months. He has for eight years remained quite well.

Dr. D. Bryson Delavan, of New York, referred to a case of abscess of the antrum which had resisted a great variety of treatments at skillful hands, in which the application of the galvano-cautery to the mucous membrane of the middle turbinated body of the affected side was followed by marked temporary relief.

Dr. Bryan agreed with all that had been said, and further stated that the obstinacy of these cases was, he thought, largely due to incompletely washing out the cavity, leaving septic matter between the partial folds of mucous membrane, which is sufficient to start up the inflammation again after it had apparently subsided.

LITHOLAPAXY IN CHILDREN.

Read in the Section of Surgery and Anatomy, at the Fortieth Annual Meeting of the American Medical Association, June, 1889.

BY DUDLEY P. ALLEN, M.D.,

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In accepting the invitation of our President to discuss before this body the subject of litholapaxy in children, I have felt no slight degree of hesitation. In the region of country where I reside —Cleveland, Ohio—stone in the bladder is of rare occurrence, so that no one surgeon secures a large number of cases for operation. However, having resided in the Massachusetts General Hospital, and having seen during three years the evolution of the operation of litholapaxy in the hands of Henry J. Bigelow, and having followed it carefully abroad as performed by Guyon of Paris, Sir Henry Thompson of London, and other surgeons, and having added to this some experience of my own in operating upon children—I shall venture briefly to open this discussion, hoping to elicit from others opinions which will be of value to us all.

Though the operation of litholapaxy on children is a recent one, the success with which it has been performed must, beyond all question, place it among the established operations. Introduced into the Indore Hospital of India by Surg. Major Keegan, it had, according to the latest statistics which are within my reach, been performed by him and his associates in 114 cases, with four deaths. One of these deaths was of a patient with very advanced kidney disease, where operation was earnestly solicited only in the hope of securing relief from suffering. A second death resulted from three attempts to crush a calculus formed about a tilli stalk. Whether or no these two cases be deducted from the number of deaths, as perhaps they might be with fairness, the result is a brilliant one. To be sure, the last report of Surg. Major Freyer gives 165 successful consecutive lateral lithotomies on boys under 16 years of age; but he reports sixteen successful consecutive litholapaxies, and favors the operation in suitable cases. To employ this operation to the exclusion of all others would of course be an error. There are, however, many cases in which it is especially adapted. To point out these cases, and the elements of importance belonging to the operation, is the object of this paper. In doing this we will compare litholapaxy with lateral, median and suprapubic lithotomy.

In comparing litholapaxy to lateral lithotomy it must of course be acknowledged that Freyer's 165 successful consecutive operations upon boys is a more brilliant record than that obtained by any other method. These figures represent, however, the result of vast experience, and are, so far as we know, the best ever obtained. It is not at all impossible that time and experience may yield similar success to litholapaxy.

The removal of large stones from boys by lateral lithotomy is associated with dangers of bruising, hæmorrhage, and possible injury to the reproductive apparatus. Too great size is also a bar to litholapaxy in children, on account of the difficulty in removing the fragments of the crushed stone through the necessarily small evacuating tube It is in these cases of large calculi that the suprapubic operation has its advantages, as well as in cases of diseased bladder or encysted stones.

In case of small stone, median lithotomy is an excellent operation, and is a formidable rival to litholapaxy in the field to which the latter is especially adapted. In this connection a letter

which I have recently received from Dr. J. G. Kerr, of Canton, China, may be of interest. I take especial pleasure in reading his letter before this body, on account of the admirable work done by this missionary physician in operating on calculi—some account of which was recently published in this country. He writes: "I have not practiced litholapaxy in children. In most of the cases I meet with in boys, the stones are large, and I would be disposed to crush only in cases where the stone was very small. I would prefer the operation I practice, and have performed in many cases, simple incision of the membranous urethra, and extraction of the stone with a small pair of forceps, dilating slightly the opening in the bladder. The operation is simply an incision into the urethra and as devoid of danger as any operation for stone can be. My experience in lithotomy, lithotrity and litholapaxy amounts to between 700 and 800 operations, etc." I omit the remainder of the letter for lack of time, but surely the opinion of a surgeon of so great experience and recognized ability must weigh strongly in favor of the operation of median lithotomy for small calculi in boys.

Before speaking of the advantages peculiar to litholapaxy as compared with suprapubic lithotomy, I think you will be interested to hear a letter which I have received from Professor Frederick Petersen, of Kiel, Germany, under date of June 3. As you all know, he is the originator of the operation of suprapubic lithotomy as at present performed, an operation which has secured such brilliant results as to entitle him to the admiration of all surgeons and the thanks of humanity. His letter, translated, is as follows: "With litholapaxy in children I have no experience, since I always do the cutting operation, and in difficult cases give the suprapubic operation the preference. When possible after removal of the stone, I unite the bladder with a double line of catgut sutures. The upper portion of the incision in the abdominal wall is united by sutures of silkworm gut. Through the lower portion of the abdominal incision are placed superficial and deep silkworm gut sutures, but these are not tied. This lower portion of the wound is tamponed with iodoform gauze, which remains three days, when it is removed and the sutures are tied—thus fully closing the wound. No catheter is placed in the bladder, but the patient is permitted to pass his water if he is able to do so; otherwise it is drawn off by a catheter as required. *Mit der Litholapaxie kann ich mich noch immer nicht befreunden.*"

Agreeing then, as all must, that there is much in favor of the various cutting operations, and that there are cases suited to each of these methods, let us compare them with litholapaxy. One advantage of litholapaxy over other operations is that it is not a cutting operation. Of course, from the standpoint of good surgery, this should weigh little in its favor. This much, however, is true: There is no small proportion of cases in which an operation where cutting is required will be long delayed; whereas, should the public understand that calculi can be removed without cutting they will bring to the surgeon at a much earlier period children suffering with stone, and thus render its removal more easy, whatever plan may be adopted. Cutting operations, however, have another and greater disadvantage. Thus far, union of the bladder by first intention after cutting has been rare, by any method save the suprapubic, and in this operation it is not the rule. Though the drainage of the bladder may have its advantages in securing a healthier condition of that viscus, it has the very serious disadvantage of soiling the patient's bed, rendering him very offensive for a longer or shorter period and, when the bladder fails to heal for a considerable time, as is not infrequently the case, resulting in sores that are painful and troublesome. The difference in comfort to the patient, and the time he is confined to the hospital, is also considerable. The average number of days spent in the hospital in Keegan's cases of litholapaxy was 5.7. The average which he gives after lithotomy was 17.61. The average days in hospital of Freyer's cases after litholapaxy was 6.12. We are unable to give a sufficiently large number of cases of suprapubic lithotomy, performed by any one operator on children, to establish any reliable percentage as to time, and it is evidently unfair to this operation to judge it by statistics gathered from various sources. Though a certain percentage of cases heal by first intention, I think it is beyond all question that up to the present time no operation for stone confines patients to their beds for so short a time as litholapaxy. In many cases after litholapaxy in children, the patients are free from all discomfort on the third day, and are up and around. Litholapaxy cannot in any way injure the reproductive apparatus, but very likely the danger of this resulting from lateral lithotomy has been overestimated.

The advantage gained by ability to see the interior of the bladder, as is done in suprapubic lithotomy, is urged in favor of that operation. It is to be remembered, however, that the bladders of boys are, as a rule, in a more healthy condition than those of adults, and that encysted stones are uncommon, so there is rarely any necessity of seeing the interior of the bladder. It has been objected, too, that stones recur more frequently after litholapaxy than after cutting. However, Keegan says that of his 114 cases operated between 1881 and 1886, not a single one has returned so far as he knows, and he adds that had there been a recurrence of the stone it is quite probable that his patients would have returned to him.

A case of my own, bearing on this point, may

not be out of place. A boy was cut for stone in March, 1884, and again in April, 1886. In about one year after the second operation the boy began again to suffer from symptoms of stone, and in February, 1888, I performed litholapaxy. The boy's sufferings had been terrible, vesical tenesmus being frequent, and so severe as to cause his cries to be heard all over the neighborhood. The boy slept very little, and I have rarely seen a patient in a more pitiable condition. Since the performance of litholapaxy the patient's relief has been complete. Should there be any return of the calculus there certainly will not be the hesitation to undergo another operation for crushing that there was in the case of cutting. The success of this case may have been due to the after-treatment. After recovery from the operation I washed out the bladder twice each week during nearly two months with a solution of argenti nitratis, varying from ½ to 1 gr. to water ʒiv. This is, I am convinced, a wise plan of treatment, and has resulted in this case much more successfully than did the previous cutting operations. It seems to me as reasonable to treat a bladder with cystitis by washing it out, after litholapaxy, as thus to treat cystitis from any other cause, and I fully believe that by this method all the advantages can be gained that are now claimed for drainage after lithotomy, without the accompanying disagreeable features of bad spells, a filthy bed and irritated skin.

One great difficulty in litholapaxy is the small size of the instruments which must be used. These are larger than would be supposed possible. There are, however, variations in the size of the urethra in different boys. Boys from 7 to 8 years usually admit a 10 to 11, English scale. Some cases occur, however, where even after incising the meatus, the urethra is so small that suitable instruments cannot be inserted. Obviously in these cases lithotomy is the proper operation.

As to whether hard or large stones should be crushed is a question. Certainly there are limitations in both these directions. Though a stone can be measured as to size with some degree of accuracy, still all who have performed litholapaxy have found stones which gave the same measurement by the lithotrite vary greatly in weight and volume. This is easily explicable in consideration of the different diameters by which a stone may be seized. Concerning the density of a stone, it can hardly be possible to form any definite idea of many calculi, until the operation of crushing has begun. It is not rare to seize a stone with a lithotrite, and feel the blades of the lithotrite sink into the stone, and then come upon a hard centre, which is crushed with much greater difficulty. Were one to find a large and very hard stone, it would doubtless be well to abandon litholapaxy, and perform lithotomy—and the size of stone upon which an operator may venture must be measured somewhat by his experience and dexterity.

Before considering the technique of the operation, we may quote from a letter from Mr. G. Buckston Brown, for many years associated with Sir Henry Thompson, and himself a surgeon of large experence in operations on stone. Under date of May 26, he writes: "I respond with pleasure to your request. I was, I believe, the first publicly to draw attention in our London medical press to the excellent work done by Surg. Maj. Keegan of India, the pioneer of lithotrity in children. I think I cannot do better than enclose you an extract from my article on the choice of operation." . . . . "Now, however, that lithotrity at one sitting—by which is meant the crushing and complete evacuation of the calculus at a single operation—is accepted as yielding in the adult far better results than the older or many sittings method, it is not unlikely that the single sitting operation may prove superior even to lithotomy in children, for if efficiently carried out, lithotrity will no longer be open to the objections formerly urged against it. . . . The surgeon may, therefore, choose for himself between lithotomy and lithotrity if called to operate upon a boy; but if inexperienced in lithotrity, he will perhaps do well to decide in favor of the former."

We will now consider the operation itself, and first as to instruments. Their size must vary with the case to be operated upon, ranging from 6 or 7 to 10, English scale, and, as has already been stated, the age of the boy is not a sure indication as to the size of the urethra—since in young children it is sometimes quite capacious. With instruments of so small size the importance of having them of the most reliable manufacture will at once be apparent.

Since it is desirable to use a lithotrite as large as can safely be inserted, it is imperative that its size should not be increased before withdrawal; consequently, provision must be made against impaction. Were impaction of the blades with débris to occur, serious damage might result in their withdrawal. On this account it is found best to construct the lithotrite so that the male blade shuts into the fully fenestrated female blade, rendering impaction impossible. This complete fenestration of the female blade has one disadvantage in my experience, viz.: in crushing a hard stone, pieces which are too large to pass through the small evacuating tube may be repeatedly pushed through the fenestrated female blade without being crushed. When this difficulty has arisen, I have overcome it by inserting a small lithotrite with a flat unfenestrated female blade, having no fear of impaction in crushing the few small pieces which may remain. With a few motions of this lithotrite, I have accomplished what I had failed to do after working with the completely fenestrated blade for a considerable time.

The small size of the evacuating tube shows the necessity of finely crushing the stone, and it is desirable that this be done with as few insertions of the lithotrite as possible. Frequent withdrawal of the lithotrite may cause congestion and swelling of the mucous membrane of the urethra, and consequent difficulty and danger in the insertion of instruments. A recent letter from Guyon of Paris may be of interest as bearing on the question of crushing. He writes: "Calculi are very rare in our country among children, especially those of the better class. My hospital service is one of adults; consequently I have performed lithotrity only twice on children under 5 years of age. One of these patients had a very small stone; the second had a stone which measured 3 centimeters. Lithotrity gave an excellent result. I am a strong advocate of lithotrity among children, but only of lithotrity at one sitting. Not to empty the bladder completely of fragments, but to leave them, is a gross surgical error. There are but the two methods—either lithotomy or lithotrity at a single sitting. I find, however, the term litholapaxy a misnomer. It supposes the aspiration of the fragments to be the chief rôle. It is the crushing which is the chief rôle, and lithotrity is the important thing. I am a strong advocate of aspiration, but this is only a complement, a grand perfecting of the operation to be sure, but it is not the operation, and as a result one does not perform litholapaxy, but lithotrity. It is thorough crushing which renders possible successful evacuation, and this is especially true with children, since with them one cannot employ large tubes for the evacuation of the fragments." Standing as Guyon does, one of the first surgeons of the world in the line of genito-urinary surgery, his opinions are entitled to much consideration.

As in adults, so in children, the facility with which a stone is crushed depends largely upon its density. I show you here specimens of both hard and soft stones which I have removed from children by litholapaxy, and I have found that a small hard stone requires far more time in crushing than a soft stone of much larger size.

In withdrawing an evacuating tube it is important to bear in mind the possibility of a fragment of stone being caught in the eye of the tube. To draw this through the urethra of a child might cause serious damage—as well as to lose a fragment in the urethra.

The narrow size of the meatus in many cases renders its incision desirable, since less damage is done by its incision than by forcing instruments through it. All manipulations in the child's bladder require the greatest delicacy, and the dexterity and care of the operator will undoubtedly influence greatly the success of his operations.

I show you here two lithotrites, the long one made by Codman & Shurtleff, of Boston, with a Bigelow lock; the short one made by Wies, of London, with the old lock. Without question the small instrument has its advantages in being lighter, more easily manipulated, and perhaps less likely to do damage by prying upon the neck of the bladder while working. The Bigelow lock is, however, vastly superior to the other, since the same movement with the right hand which locks the instrument begins the crushing and decreases greatly the liability of losing the stone from between the blades.

So far as difficulties of operations in children as compared with adults are concerned—though the operation requires much dexterity and, on account of the size of the instruments, is perhaps more difficult, on the other hand the bladder is less frequently in a seriously diseased condition. There are no enlarged prostates, pockets or projecting bands to give trouble; diseased kidneys are less frequently a complication, and the recuperative power of children is greater than in adults.

To summarize, then, we would say that beyond question the operation of litholapaxy in children is one which must be recognized. It is particularly suited to medium and small-sized stones, and though median and lateral lithotomy are very successful in such cases, we believe litholapaxy will be equally so in skilled hands, and that, beside safety, it has the great advantage of absence of cutting and of the filthy condition of the patient. Suffering is commonly very slight and is confined to a few days, and it is not infrequent for patients to be up and around on the third or fourth day. Patients will not hesitate so long before the crushing as the cutting operation, and should the return of the stone be more frequent after crushing than after cutting—as is by no means shown to be the case—a second operation will be more easily performed than the first, on account of the size of the urethra increasing with the age of the patient. The condition of a boy's bladder is certainly more likely to be favorable to litholapaxy than that of an adult.

Our idea would be that large and hard stones should be removed by the suprapubic operation, especially if for any reason it is desirable to see the interior of the bladder. Medium and small stones are favorable for removal by litholapaxy, unless for some reason the urethra be smaller than normal. The operation of median lithotomy is a favorable one in cases with small stones, but an operator skilled in litholapaxy would do well to choose the latter.

In cases of medium-sized stone, with a urethra not sufficiently large for the introduction of proper instruments for crushing, lateral lithotomy is indicated.

DR. R. P. HARRIS, of Philadelphia, has been elected an honorary member of the American Gynecological Society.

MEDICAL PROGRESS.

TREATMENT OF PULMONARY PHTHISIS.—At a special meeting of the Allegheny County Medical Society, held August 20, 1889, DR. LANGE reported a new method for the treatment of pulmonary phthisis. We quote from him as follows: The method consists of the inhalation of vaporized mercury and iodine. Of the results of this method I have nothing to say. I cannot forget that grass has not yet grown upon the grave of gaseous enemata, and I am aware that many men, many years and many cases are required to produce evidence of the usefulness of any remedy or method in the treatment of anything, even when the remedy or method possesses usefulness. I report this method because I desire co-workers.

It suggested itself to me that vaporized mercury, if brought into more or less direct contact with the bacillus of Koch, might destroy this, and that iodine, if applied directly to the ulcerating surfaces of lung tissue might effect a more powerful beneficial action than that resulting from its ordinary method of administration. I have had, and still have, the valuable assistance of Dr. Tingley in the preparation of apparatus and in devising ways and means by which these vapors may be satisfactorily administered to patients. This has presented many diffculties. A principal one is, that I know of no manner as yet by which a definite, a known quantity can be given. The vaporized mercury salts are resublimed and deposited upon the cooler parts of the apparatus. This is particularly true of the inhaling tube, which is always the coolest part of the apparatus. The consequence of this is that patients receive always an unmeasured, an accidental quantity of these salts or vapors, and not a quantity which is measured or known. To this fact are due two accidents, namely, that one very feeble patient was violently purged, and another was salivated. However, we hope to overcome this defect of apparatus and to be able soon to give patients exact quantities of these salts. The desideratum is an inhaling tube which will bear the temperature necessary to hold the mercury salts vaporized up to the lips of the patient, and which at the same time shall be flexible. Flexibility is almost a necessity; a feeble patient cannot breathe deeply and persistently from a stiff tube, a glass tube such as I now use.

I have found that the only salts of mercury available for this purpose are the red oxide and calomel. All others are reduced before being volatilized. I began with the iodide of mercury. This and all others when used result in the vapor of metallic mercury only. I have found no objection, however, to the use of metallic mercury, only it is to be noted that when other salts than calomel and the red oxide are used, the patient receives the vapor of metallic mercury.

Can the vapor of mercury, or anything inhaled, reach the bacilli in a tuberculous lung? Those bacilli, which are in consolidations, provided such consolidation is connected with a pervious bronchial tube, those in lung cavities furnished in the same manner, those in the bronchial tubes, those in the alveoli, and those in the sputum may be reached by this vapor, or by anything which may be deeply and persistently inhaled. But these bacilli are comparatively inert; they are harmless; they have already accomplished their mission of destruction, and are being extruded from the body. Those whose destruction is very much more desirable, those which have not yet, but which certainly will, produce consolidation and softening, *i. e.*, destruction of lung tissue, those in the pulmonary connective tissue, and the lymphatic sheaths of the blood vessels, can these be reached by anything that may be inhaled? Again, if we grant that in a certain patient every bacillus has been destroyed, this is by no means synonymous with his cure. Evidences of this fact are presented daily; patients die of non-tuberculous phthisis very readily. And the tuberculous patient with every bacilli in his lungs destroyed, possesses still that fatal predisposition, and will be reinfected.

It is a question also whether mercurial vapor is a germicide. No one will deny this property to corrosive sublimate. But corrosive sublimate is not volatilizable, and volatilized mercury, volatilized calomel, and red oxide, are very different substances indeed.

Despite these theoretical objections I am encouraged to proceed with this treatment of phthisis, and when I have perfected the apparatus and have a series of cases certainly tubercular, as demonstrated by the discovery in the sputum of the bacilli, which Dr. Matson has kindly consented to do for me, I shall report again to the Society.

THE DIURETIC ACTION OF CAFFEIN IN COMBINATION WITH PARALDEHYDE.—Their attention having been drawn to the excellent experimental studies made by VON SCHRODER concerning the diuretic action of caffein, V. CERVELLO and G. CARUSO-PECORARO (*Sicilia Med.*) have tested its effects in the human subject. The first patient, a woman, 40 years of age, exhibited a moderate degree of intra-peritoneal exudate, the result of venous stasis from a heart lesion. A combination of caffein with paraldehyde resulted on the first day in an increase in the excretion of urine from 900 ccm. (the previous amount) to 1,690 ccm. By the eleventh day the amount had been increased to 2,100 ccm., and the ascites had markedly diminished. In like manner a similar result was effected in the case of an individual 22 years old, who also suffered from a heart lesion. In a case of chronic diffuse nephritis with marked œdema,

the patient's condition was considerably improved by the administration of caffein and paraldehyde the quantity of urine passed increasing from 800 ccm. to 2025 ccm. Quite as favorable as this was the result produced in a second and similar case of nephritis. This combination of remedies has also produced absorption in serofibrinous pleuritis, with abundant exudate and no tendency to spontaneous resorption.

The paraldehyde is given either in capsules or solution in doses of 2-3 grm. two or three times a day; the caffein in doses of 0.25–0.5 grm. The paraldehyde should always be administered toward evening in order that its soporific effects may be felt at bedtime. In ascites following cirrhosis of the liver, the usual and favorable diuretic effect of the caffein was not obtained.—*Centralblatt f. Klin. Med.*, No. 34, 1889.

REPORT OF TEN OPERATION UPON THE KIDNEYS.—(E. DOYEN, before the Académie de Médicine.) These ten operations were performed by the lumbar method. Three patients upon whom nephrectomy was performed died. In two of these there was old renal tuberculosis, and the opposite kidney had undergone amyloid degeneration. The third had suffered from attacks of hectic fever for six months and the kidney contained a large calculus. In all three cases the operation presented great difficulties on account of the size of the purulent kidney, as well as the extent and firmness of the adhesions. The removal of the kidney in the other cases operated on was relatively easy and recovery occurred without the slightest complication. One of these had undergone an operation for the establishment of an uretero-cutaneous fistula forty-two days before the nephrectomy, the left ureter having been divided during an ovariotomy.

Two other cases are of particular interest. One was that of a woman 42 years old, who submitted in June, 1887, to removal of a tuberculous kidney together with the upper third of the degenerated ureter; to-day she is in perfect health. In another case, two years after removal of the right kidney (which was reduced to a fibrous shell containing more than 100 calculi) it became necessary to perform nephrotomy and lithotomy on the left side on account of a calculus deeply engaged in the ureter. This intervention was followed by complete success.

In two operations nephrorrhaphy was performed through a simple vertical incision. The kidney was fixed to the quadratus lumborum and the musculo-en-aponeurosis by four sutures, which were pressed as deeply as the pyramidal region; the fatty capsule was resected; the results have been excellent.

In cases of lithiasis nephrotomy is indicated, being preferable to nephrectomy, because a very small bit of renal tissue becomes precious when the second kidney is affected. Incision followed by curetting of the cheesy foci should be preferred to nephrotomy in cases where there is a very large and very adherent tubercular kidney. *Le Bulletin Médical.*

CAUSE OF LOCAL RECURRENCE AFTER AMPUTATION OF BREAST FOR CARCINOMA.—(LOTHAR HEIDENHEIN in Langenbeck's *Archiv für Klinische Chirurgie*, vol. 39, Heft 1.) In making a most thorough and complete study of several thousand microscopic sections taken from the cut surface of eighteen different breasts, removed by Prof. Kuster, he has come to the following conclusions: That although in each case the cut surface was a considerable distance from the tumor, in nine cases portions of the fascia of the pectoralis major, which remained, certainly contained microscopic collections of carcinomatous cells, in three others this condition was possible although not proven, while six cases seemed to be free from remnants. The clinical observations of these cases so far corresponds very closely to this. He found that the invasion of the surrounding tissue took place through the lymph channels and along the lymph spaces surrounding blood vessels and in the connective tissue trabeculæ, but reaching the fascia of the pectoralis major they filled this structure, but did not penetrate the muscle except in advanced cases, *but this fascia can be removed only by taking with it a layer of the muscle.* This is the practical point which will probably save hundreds of cases from having recurrence of mammary cancer in the future. The article covers 70 pages and is of very great scientific and practical value. The author also confirms other previously observed facts.

AN ABORTED OVUM OF THREE MONTHS' DEVELOPMENT.—In the Obstetrical Society of Vienna, PROF. GUSTAV BRAUN exhibited an aborted ovum of three months' development, in which the relation of amniotic bands to arrested fœtal development was susceptible of beautiful demonstration. The fœtus itself was macerated; the cord 9½ cm. long, which was torn during birth, passed from the umbilical ring under the left axilla to the neck, around which it took a turn and then passed around the right shoulder, which appeared as though ligated by it. There were also fibrous bands in connection with the fingers and toes. Prof. Braun thought that the relative shortness of the cord was the cause of death, and that if development had advanced spontaneous amputation would probably have occurred.—*Cent. für Gyn.*, 1889, No. 34.

YELLOW FEVER is epidemic in many localities in Cuba, the mortality being relatively high, especially in Havana.

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SATURDAY, OCTOBER 5, 1889.

THE CAUSES OF WASTE IN CONSUMPTION.

Loss of tissue is so characteristic of pulmonary tuberculosis that it has given the popular name to the disease. Not the fat alone of the body is thus affected, but it is also observed in the muscles and organs. This loss of weight is so early a symptom that there would seem to be an inherent tendency in the disease in this direction. Still, a little consideration shows there are certain conditions capable of causing waste independently of any inherent influence in this direction. In most cases even of incipient phthisis there is a positive want of sufficient nourishment to supply the needs of the organism. This is due generally to a loss of appetite amounting to actual aversion for food, as well as to defective assimilation. In some, however, the appetite remains good, but either the digestion is imperfect or the system is incapable of appropriating the nourishment supplied. There is, therefore, in these patients profound anæmia. Yet, the fact that many times anæmic individuals, who are not consumptive, take on fat, apparently as the result of incomplete oxidation, would seem to indicate that the anæmia of phthisis is linked to some subtler cause of wasting, some molecular defect of the tissues, some chemico-physiological peculiarity.

Later on in the development of this malady there are certain very apparent causes of the emaciation, chief among which is fever. That fever causes an increased destruction of the tissues is proved by the augmented excretion of carbonic acid, according to Landois, of from 70 to 80 per cent., and by the increase in the amount of urea, uric acid, and other solid constituents of the urine. The urea is increased from one-third to two-thirds and the potash may even reach many times its normal amount. But not only does fever directly influence the consumption of tissue, it also still further impairs appetite and digestion, in this way favoring waste. An indirect proof of the deleterious effect of an elevated temperature, and an indication for treatment, is afforded by the fact that when the body temperature becomes permanently reduced to the normal, the weight of the patient is apt to increase or at least remain stationary.

Another potent factor in promoting emaciation is profuse sweating. This symptom is complained of because productive of so much discomfort and exhaustion. It is serious, however, for another reason, viz.: because it robs the system of much valuable material. More than 1 per cent. of the perspiration is made up of solids, organic and inorganic, and when it is considered that 2 lbs. of liquid leave the body in twenty-four hours in the form of insensible perspiration, it becomes intelligible how serious must be the loss from the night sweats of the consumptive. To be sure, the great loss of fluids thus sustained can be rapidly recovered from by the ingestion of more fluids, but the salts contained in the perspiration are sadly missed by the system, and, if not replaced, form a positive source of waste.

In most cases, particularly those at an advanced stage, the profuse expectoration is an additional cause of emaciation as well as of loss of strength. Even when there is no blood in the sputa, the system is subjected to a heavy tax to contribute the leucocytes, mucus and other elements composing so large a part of the expectoration. When, moreover, hæmoptysis occurs, very decided impetus is given to the wasting process, and the patient appears to fall away before one's very eyes. Such also is the case if there supervenes suddenly one of those obstinate diarrhœas that torment the consumptive. A patient, who may have regained a comparatively normal daily temperature and seems to be actually taking on a little flesh, will upon such an exhausting discharge grow suddenly gaunt and haggard and progressively fail despite all measures to the contrary.

In conclusion it may be said, the conditions that influence waste are the very phenomena which stamp this disease with its peculiar char-

acter. There can be no consumption without waste any more than there can be fever without elevation of bodily temperature, and in some this loss of tissue is so out of proportion to symptoms explaining it, that there would seem to be some subtle cause existing in the very nature of the disease which defies analysis.

LAWSON TAIT ON FIBROIDS OF THE UTERUS.

A few weeks ago we called attention to the views of THOMAS KEITH on Apostoli's treatment of uterine fibroids by electricity. It is, perhaps, no more than fair to give place to the rejoinder of the most prominent advocate of the purely surgical method of dealing with this condition. In a lecture, published in the *British Medical Journal* of August 10, 1889, MR. TAIT calls attention to the fact that hysterectomy, which Mr. Keith seems to consider the only alternative treatment, is only required in a small proportion of cases, and that the great majority can be satisfactorily treated by the comparatively safe and simple operation of bringing about the menopause by extirpation of the uterine appendages. He claims that "the complete and permanent efficacy of this method of treatment has been established by evidence beyond all cavil; in fact it stands unrivalled in the history of modern surgery," and states that his mortality in 262 consecutive cases has been only 1.23 per cent. To the operation of hysterectomy he expresses as strong a repugnance as Keith; but, although he does not expressly discuss this point, he evidently has little faith in the efficacy of electricity in cases which call for the severer measure.

To electricity he objects that it is tedious, and, notwithstanding Keith's statements to the contrary, may be very painful, citing a case, treated in Paris, in which electricity was used thirty-three times during a period of three months, and thirty-one times the patient was under anæsthesia. That it sometimes fails when administered by thoroughly competent persons, he has had evidence in cases which have come into his own hands, and there is danger of losing precious time in unsuccessful treatment.

He complains that Keith furnishes many statements, but few facts, and wishes for precise information in regard to the mortality of the electrical treatment, the permanency of the results secured, and the comparative convenience and expense of the two methods.

He concludes by quoting what he calls the "prodigious statement" of Keith, that in 10 per cent. of his cases of hysterectomy the operation was followed by insanity. On this point he says: "In not one of my hysterectomies has insanity followed the operation. I have seen insanity follow removal of the appendages for myoma in two cases, but in one the patient was insane from the moment she came out of the chloroform, and she was "queer" before she went under it."

In view of such results as Tait has achieved it is not surprising that he should have little inclination to change the methods which have proved so successful in his hands. If any value is to be allowed to evidence, however, it can hardly be doubted that very satisfactory results have been attained by the electrical treatment. Martin, of this city, at the meeting of the Illinois State Medical Society, May 22, 1889, reported one hundred consecutive cases treated by Apostoli's method, without a death, with complete cure in eight cases, symptomatic cure in sixty-eight others, and decided improvement in the symptoms of most of the remainder. If such results can be secured by this method and should prove permanent, it is likely that many women will prefer, even at the cost of some pain and inconvenience, to avoid a mutilation which is repugnant to their feelings and, besides the inevitable result of sterility, is not always exempt from other unpleasant consequences. Glævecke, of Kiel, found that a depressed, low-spirited condition was generally observed after removal of the ovaries; in three cases out of forty-three insanity followed the operation, proving permanent in one. Sexual desire and pleasure were diminished in nearly all the patients, and the disturbances usual at the menopause were prolonged, in a number of cases, for four or five years.

Brilliant as have been the results of surgery in the relief of this affection, it can hardly be said that they leave nothing to be desired, and anything which promises the benefits without the drawbacks of the operation with which Mr. Tait's name is specially associated is worthy of careful trial. It is hardly probable that electricity will wholly supplant operative treatment, but it may well be that when both have been thoroughly tested it will appear that each has its appropriate field of usefulness.

EDITORIAL NOTES.

HOME.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.—The seventeenth annual meeting of this Association will convene at Brooklyn, on October 22, 23, 24 and 25. From a review of the topics to be presented at that meeting, a list of which will be found on page 504 of the present issue, and from the prominence of those who are to engage in the discussion of these subjects presented, we have reason to believe that the meeting will be one of unusual interest. We shall endeavor to present our readers with as full a report of its proceedings as the columns of THE JOURNAL will permit.

THE MEDICAL COLLEGES in Chicago opened last week with a large attendance of students.

PROPOSED PUBLIC BATHS FOR CHICAGO.—The Trade and Labor Assembly some months ago petitioned the city council for a system of public bath houses. The matter was referred for investigation, and Chief Tenement Inspector Young has prepared plans. He favors bath houses built on the cottage style, 100x55 feet, each to contain forty-one dressing rooms and an office for the keeper. The cost will be about $3,000 each. The water at one end will be four feet deep and five at the other end. The slope to be gradual. Mr. Young thinks that one should be anchored in each of the park lakes in the city, and others along the lake shore. The report will be sent to Commissioner Purdy and by him referred to the council.

THE AMERICAN ACADEMY OF MEDICINE, of which Dr. Leartus Connor, of Detroit, is president, and Dr. R. J. Dunglison, of Philadelphia, secretary, will hold its annual meeting in Chicago, on the 13th and 14th of November.

WORK OF THE GEOLOGICAL SURVEY.—Major J. W. Powell, chief of the geological survey, was in Chicago last week, after fifty-five days' work as advisory member of the senatorial committee investigating irrigation in the West. The committee began work at St. Paul and concluded its labors at Ogallala, Neb. It visited the Dakotas, Oregon, Montana, Washington Territory, Idaho, Utah, Nevada, California, Arizona, New Mexico, Texas, Indian Territory, Kansas, Colorado, Wyoming, and Nebraska—every State containing arid lands. Eighty meetings were held and 200 witnesses heard. Major Powell thinks over 100,000,000 acres of land can be irrigated successfully. The resolution under which the committee was appointed did not contemplate appropriations for building reservoirs and artificial lakes—merely a thorough survey of the territory, that the work may be done by private enterprise. Major Powell thought Congress would never take charge of the construction of the ditches and reservoirs. The survey of Illinois, particularly along the proposed line of the drainage canal, is progressing, and will probably be completed in another year.

PRIZE OF THE PHYSIOLOGICAL SOCIETY.—Dr. Wier Mitchell has placed at the disposal of the American Physiological Society the sum of $200 as a prize for original work in nerve physiology, which work shall have been done after January 1, 1886, and before October 1, 1890. At the latter date the competition closes, and essays must be in the hands of Dr. H. Newell Martin, secretary of the Society. The award will be made by the council of the Society. The subject, which has been selected by Dr. Mitchell, relates to the rate of nerve transmission in man, and the circumstances which cause that rate to vary.

MEDICAL SOCIETY OF VIRGINIA.—At the twentieth annual meeting of this society, held in Roanoke, September 3, 4 and 5, 1889, the following officers were elected for the ensuing year: Dr. Oscar Wiley, of Salem, president; Dr. J. M. Estill, of Tazewell Court House; Dr. Alfred C. Palmer, of Norfolk, and Dr. Casper C. Henckel, of New Market, vice-presidents; Dr. Landon B. Edwards, of Richmond, recording secretary; Dr. J. F. Winn, of Richmond, corresponding secretary; and Dr. Richard T. Styll, of Hollins, treasurer. Dr. John S. Apperson, of Glade Spring, was chosen to deliver the address to the public and profession during the session of 1890. Dr. C. T. Lewis, of Clifton Forge, was selected as the leader of the discussion of the selected subject for 1890—"The Treatment of the Summer Diarrhœa of Children." Dr. R. F. Young, of Love's Mill, and Dr. P. B. Green, of Wytheville, were nominated for commission as members of the Medical Examining Board of Virginia, to fill vacancies occasioned by two resignations. Rockbridge Alum Springs was selected as the place for the annual session of 1890, some time between the 25th of

August and the 5th of September, as the Executive Committee might hereafter determine.

JELLY-FISH STING.—*The Medical News* says that bathers who have encountered the long tentacles of a medusa will be pleased to know that the "sting," or erythema, may be speedily relieved by the application of water rendered alkaline by common washing soda, in the proportion of an ounce of soda to about two quarts of water. Dr. B. M. Richardson states in the *Asclepiad* for September, that he has personally tested the efficacy of the treatment, and has also used it successfully in several severe cases.

THE NATURAL MINERAL SPRINGS OF THE UNITED STATES.—An important meeting of gentlemen interested in the natural mineral springs of the United States, was held at Washington last week, and a temporary organization effected by electing Thomas Tomlinson president and Dr. A. Emfield secretary and treasurer. The attendance was large, and a general convention was called to meet at Chicago, November 19. A committee was appointed consisting of James W. Inches, D. L. Sterling, and Alfred Moore to formulate a plan of permanent organization, and to report at the Chicago meeting.

HOW MUCH SHOULD A CITY PAY ITS HEALTH OFFICER?—The Michigan State Board of Health has recently published a paper by its Secretary, Dr. H. B. Baker, in which he asks the question how much the average city or village can afford to pay its Health Officer. He answers this question in this way: Statistics which can not be questioned prove that in those localities in Michigan where the recommendations of the State Board of Health are carried out about 80 per cent. of the deaths from diphtheria and scarlet fever are prevented by the thorough isolation of all infected persons and the thorough disinfection of all infected persons, things and places. Statisticians usually value a person in the prime of life as worth to the community about $1,000. Dr. Baker thinks that in a village of 1,500 inhabitants a health officer can easily save the lives of two children and one grown person in each year, and he concludes that such a village can well afford to pay its health officer $2,000 for the prevention and restriction of scarlet fever, diphtheria and typhoid fever, and make money by the transaction.

FOREIGN.

YELLOW FEVER IN SPAIN.—Reports have been going the rounds of the papers relative to an alleged epidemic of yellow fever at Vigo. There were several cases of gastric and typhus fever, but none of yellow fever.

LEPROSY IN THE ORIENT.—In the Academy of Medicine, Paris, M. Zambaco recently stated that the question of the contagiousness of leprosy, though admitted by many, was not yet settled in his own mind. He had not discovered an example of contagion either in Turkey or in the other oriental countries that he had visited. Until he is better informed he will remain an anti-contagionist, for he believes that if leprosy is contagious at all it is only very exceptionally so.

CHOLERA is prevalent at Pekin, China, and nearly all the foreign residents have fled to the mountains.

OVERCROWDING OF THE PROFESSIONS IN GERMANY.—Prof. Lexis of Berlin has been writing a pamphlet on the undue increase in all the learned professions. He says there are twice as many students as can hope to make a living by the professions which they are preparing to enter.

THE French law gives a physician's claim against the estate of a deceased patient precedence.

ANOTHER ELIXIR OF YOUTH.—The *British Medical Journal* says that it is stated by a Pesth newspaper that Dr. Szikszay, a Hungarian physician, has been making experiments in the State Prison at Engelsfeld by injecting a liquid, the composition of which is not revealed, into aged persons. The results are said to be remarkable. The strength of the "subjects" was tested with a dynamometer before and after the injections. In the case of a man aged 75 years the strength was found to be increased after the seventh injection from 14 to 19 kilograms, and after the thirteenth to 35 kilograms. Experiments on men and women of different ages showed, as might be expected, marked individual differences. We may take the liberty of suggesting to Dr. Szikszay that he should communicate the details of his experiments to the Imperial and Royal Society of Physicians of Vienna, and then publish them in full in some medical journal. The after results, if any, should also be made known.

TOPICS OF THE WEEK.

STUDY OF YELLOW FEVER.

DR. GEORGE M. STERNBERG, Major and Surgeon, United States Army, has just returned from a six months' stay in Cuba, where he has been continuing his researches with reference to the cause and prevention of yellow fever.

He found in the hospitals a sufficient number of cases, and in the course of the summer made thirty autopsies. He has brought with him specimens in alcohol and cultures of microbes with which he will continue his investigations during the winter at the Johns Hopkins University. At the end of this time he hopes to present a general report of his investigations to President Harrison.

"My researches up to the present," said Dr. Sternberg, "have not led to a positive demonstration of the specific cause of the disease. But I have isolated a considerable number of pathogenic bacilli—disease-producing germs—from the intestines of yellow fever cases, and have strong hopes that one or more of these may prove to be the specific germ. I have confirmed my previous conclusions as to the absence of specific microbe organism in the blood and tissues of the patient, and have failed to find in any of my cases the germ which Dr. Freire of Brazil has claimed to be the cause of the disease. For this reason I have given my attention entirely to the bacilli of the alimentary canal. As none of the lower animals are subject to yellow fever, and inoculation will therefore be impossible, it will be extremely difficult to arrive at a positive demonstration. It will, moreover, be necessary to make extensive comparative researches to ascertain the character of the bacterial flora in the intestines in other diseases. I have isolated a long list of unknown and undescribed bacteria found in the digestive system of yellow fever patients. But I have yet to prove that some of these are uniformly constant in this disease and are not found in others. For instance, in all my researches I have never found the comma bacillus of Koch, now generally believed to be the cause of cholera."

PHENACETIN.

In a paper prepared by DR. B. FRANK HUMPHREYS, of Texas, upon "The Uses and Abuses of the New Antipyretics," he quotes the clinical experiences of various observers in connection with the uses of this new remedy, as follows:

Dr. G. Kobler, assistant at the medical clinic of Prof. von Bamberger, at Vienna, under whose direction he experimented, was the first to observe the effects of phenacetin as an antipyretic remedy. Fifty cases with high temperature came under his observation. Dr. Kobler makes the following remarks with reference to the properties of this new antipyretic:

(*a*) A specific influence on the course of the disease itself was never observed.

(*b*) Phenacetin in every case was borne well without any toxic or even disagreeable effects.

(*c*) The reduction of temperature is, as a rule, pretty rapid, while the subsequent rise is comparatively much slower. Large single doses of phenacetin have a decidedly more energetic effect than small doses frequently repeated.

(*d*) There was never any cyanosis or collapse, such as is not infrequently seen during the administration of some other antipyretics. Even in the ten cases of pneumonia treated with phenacetin there was no deleterious action on the heart, which we often meet with in the course of this disease.

Summarizing his experience, Dr. Kobler comes to the following conclusions:

1. Phenacetin is a very efficacious antipyretic.
2. It has no disagreeable or deleterious effects, such as cyanosis or collapse.
3. It produces decided euphoria.
4. It is best administered in single doses of from 8 to 12 grs., instead of smaller ones given every hour or two.
5. The reduction of temperature after such a dose is from 3.6° to 4.5° F.

Dr. Hugo Hoppe, of Berlin, under the direction of Prof. Albert Fraenkel and Dr. Paul Guttman, medical director of the City Hospital at Moabit, has collected notes of twenty cases affected with maladies in which there was pyrexia, nine of whom had typhoid fever. Dr. Hoppe's paper is a carefully written thesis, very elaborate and minute in clinical notes, taken with reference to the therapeutic action of phenacetin. He arrives at very similar conclusions to his predecessor, Dr. Kobler; and although neither of these clinicians observed any untoward effects of the drug, even in doses of from 15 to 30 grs., Dr. Paul Guttman afterwards informed Dr. Hoppe that he had observed a severe chill in a child during the subsequent rise of temperature after the exhibition of phenacetin, without stating, however, the quantity administered or age of patient. Now, it is alleged that in Kobler's fifty and Hoppe's twenty cases there were no rigors observed upon the subsequent rise of temperature. A reasonable inference, therefore, would be that in Dr. Guttman's single case the child had probably received a dose which "transcended the exclamation point," or that it may have been a single exception to the action of the medicine as a rule.

Professor Giuseppe Cattani, physician to the Grand Hospital at Milan, has tried phenacetin in more than fifty different cases, mostly febrile diseases, and his reports are almost exclusively favorable. One of the many forms of disease in which he has used phenacetin with advantage is rheumatic endocarditis, in which, he says, it acts like a tonic by rendering the heart's action steady, even where a valvular lesion has been established, as, for instance, in mitral incompetency. Prof. Cattani, like Prof. Dujardin-Beaumetz, thinks that in its analgesic property, phenacetin outrivals its predecessors. Dr. Gaiffé has found phenacetin of considerable benefit in nervous polyuria. He says the heart and pulse are never influenced by this drug. Drs. Cesari and Burani confirm most of the antecedent observations of others with reference to the action of phenacetin. Drs. Misrachi and Rifat contribute a clinical study of phenacetin, in which they also recommend the drug as an effective

antihyperthermic and antinervine remedy. In children's practice they advise it to be rubbed up in some sugar, which, they say, totally disguises any taste or smell.

Prof. Rumpf, of Bonn, says that this drug, as now produced by the manufacturers, is almost chemically pure phenacetin, and that it has no disagreeable action whatever, if given in doses not exceeding 45 grains daily. In doses of 15 grains daily, he says, it is absolutely harmless, and that there are no nausea and vomiting, no cyanosis and syncope, and no untoward symptoms in patients with high temperature.

The dose administered by Prof. Rumpf was 15 grains, by which the temperature was reduced 3.6° to 5.4° F. within from two to four hours. In a case of pleurisy, for instance, the temperature fell from 104° to 99.2° F., and on the next day from 103° to 99° F. within four hours. Having found that 15 grains of phenacetin would in some cases cause the temperature to fall below the normal, Prof. Rumpf advises that the dose given in febrile maladies should never be larger than 8 grains; but, strange as it may seem, even when given in doses of 45 grains, it is alleged that the drug never caused any nausea, vomiting, chilliness, cyanosis, or eruption of the skin; only profuse perspiration was observed in some cases.

Encouraged by the favorable results obtained by Hoppe, Heusner, and Dujardin-Beaumetz, with the administration in cases of hemicrania and other forms of neuralgia, Prof. Rumpf tried the drug, with regard to its analgesic property in a great number of cases, with uniformly satisfactory results, the dose in such cases being 15 grains. The effects of the medicament were observed in many cases within thirty or forty minutes after its administration, in other cases not until an hour or two had elapsed.

From a considerable clinical experience with this new candidate for favor, Prof. Rumpf arrives at the following conclusions with regard to its therapeutic properties:

1. Phenacetin is an antipyretic of reliable action and certain effects, from all untoward and disagreeable symptoms.

2. Phenacetin is to be recommended as an antineuralgic in 15-grain doses, viz.:

(*a*) In all cases of vaso-motor neuroses.

(*b*) In locomotor ataxia against the lancinating pains, and in cases of chronic neuritis against neuralgia.

(*c*) In various cases of neuralgia, to sooth the pain at least.

Prof. Mueller, at the meeting of the Verein für Innere Medizin, at Berlin, July 2, 1888, in a discussion with regard to the merits of phenacetin, confirmed the observations of the authors detailed herein, and further added that in daily doses of 75 grains or less its exhibition is never followed by cyanosis and methæmoglobinuria. This statement if found true by other observers, will prove to be a strong argument in favor of the claim that the drug is comparatively safe in large doses, and innocuous in medicinal doses.

Some distinguished English physicians have expressed a favorable opinion of phenacetin, corroborating the observations of the writers already mentioned.

Prof. Dujardin-Beaumetz says: "Phenacetin is a rival of antipyrin and antifebrin; in a word, it is an antipyretic and a nervous sedative. It is not unlikely that it is more active than either of the two agents just named. . . .

"I have tried it in doses of 5 grains, given in wafers, and I must say that I have observed—as others have done before—a considerable reduction of temperature in tuberculous, feverish patients, and in those suffering from typhoid fever. This reduction, which amounted to 5.4° F. in some cases, is remarkably persistent, although the dose is comparatively small; it lasts from eight to ten hours. On the duration of the disease itself the new remedy has no influence, just as with the other antipyretics.

"Phenacetin is also a strong analgesic, more powerful in its action, perhaps, than either antipyrin or antifibrin. And it acts very rapidly, in spite of its insolubility; in the gastric juice, about twenty minutes after its administration, its effects may already be observed.

"I will state in addition that phenacetin does not produce cyanosis, like antifibrin, and that in contradistinction to the latter, its presence in the urine may be detected; ferric perchloride will turn red, and cupric sulphate will turn green, if added to urine containing phenacetin."

Prof. R. Lépine, of Lyons, in a paper on typhoid fever, also expresses satisfaction with the effects of this new medicament. He says, however, that after daily doses of 90 grains there is some headache and some cyanosis; but in doses of 45 grains he says it does not affect the heart, and produces neither cyanosis nor any other untoward symptom, except, perhaps, some sweating. He gives it in 8-grain wafers, of these six to eight a day. From the foregoing it is to be inferred that the drug, in very large doses, or perhaps if long-continued in smaller doses, may produce blood changes not very unlike the effects of antifebrin.—*Therapeutic Gazette.—The Practitioner.*

HÆMORRHAGE FROM THE LARYNX.

In a paper read by DR. WILLIAM PORTER, of St. Louis, at the eleventh annual meeting of the American Laryngological Association upon this subject, he presents the following conclusions:

1. Laryngeal hæmorrhage may occur from simple local conditions.

2. Unless associated with other and more positive symptoms, it is not indicative of pulmonary lesion.

3. It is possible, through the passing of blood from the larynx into the lungs, that pulmonary disease may be incited.

4. Care should be taken to distinguish between pulmonary and laryngeal hæmorrhages, not only for the sake of more exact treatment, but especially because of the more favorable prognosis that may be given in many cases of the latter condition.—*New York Medical Journal.*

A NEW hospital has been erected in Denver, Colo., at a cost of $30,000.

PRACTICAL NOTES.

MILK SUGAR AS A DIURETIC.

PROF. SÉE has recently presented the result of his study of the diuretic action of milk sugar, which he considers the most reliable of all diuretics. In diseases of the heart and stomach, and also in renal or cardiac affections accompanied by dropsy, its diuretic qualities render it very serviceable. Milk in these cases, as is well known, is of great value, not only on account of its diuretic properties, but also because it is so complete a food. Three or four quarts of milk a day may be used with advantage, but the proportion of sugar in milk is rather too small. Prof. Sée has discovered, by experimenting successively with the different constituents of milk, that lactose is the active agent. The action of the other constituents of the milk, such as the water and the salts, is inconsiderable, the chloride of sodium adds nothing, and the salts of potassium very little, to the polyuria induced by the sugar of milk.

This sugar is found in all kinds of milk, is crystalline, and quite soluble in water. About three ounces of it dissolved in two quarts of water, with complete suppression of every other liquid, as soup, tea, wine, mineral water, etc., will afford marked diuresis in all cardiac troubles, no matter what the lesion may be, though the results are less constant in arterio-sclerosis.

In twenty-five cases abundant diuresis resulted; at least eighty ounces of urine were passed, usually one hundred or more, in the twenty-four or forty-eight hours subsequent to beginning the treatment. As soon as the treatment was stopped the amount of urine fell off to what it had been before the administration of the diuretic. Prof. Sée, therefore, considers lactose to be not only the most efficient diuretic, but also the least harmful. If milk is used and two quarts only are taken, diuresis follows; if four quarts of milk, containing six and one-half ounces of sugar of milk, marked glycosuria is produced; at the same time there is considerable excretion of urea, indicating a destruction of the albuminates. With the sugar alone these disadvantages may be avoided, for three and a quarter ounces of milk sugar in water will set up a copious diuresis, such as we cannot be sure of having from even four or five quarts of milk,

The polyuria resulting from this treatment surpasses that from all other methods; the amount of urine rises rapidly to two, two and one-half, usually to three or three and one-half quarts, and even to four or four and one-half quarts on the third day. After this it remains at that point, or drops to two and one-half quarts for some days. After a few days the same treatment may be employed to repeat the diuresis.

It is fair to say that this action of lactose may be relied upon in cases of cardiac dropsy, but in those of renal origin its effects are slight. In cardiac disease it never fails unless the kidneys are diseased and the amount of albumin is considerable. When the amount of albumin is small the result is favorable, from which it may perhaps be inferred that there is present only a simple venous congestion.

It is suggested that the diuresis may serve as an indication of the condition of the kidneys. Various conditions may affect the diuresis; sometimes diarrhœa occurs, and this diminishes the amount of urine, or the patient may have been subject to profuse sweating, which would also lessen the quantity of urine.

As a rule the remedy is well borne. It may be prescribed for eight or ten days and then omitted for a few days and again renewed. If the simple solution is not well tolerated, brandy or peppermint may be added to it. All other liquids should be reduced in amount or omitted while this treatment is pursued.

This method presents great advantages over many others, and the patient may partake of any food, a meat diet, if the physician so desires. Prof. Sée considers that the physiological action of lactose is upon the kidneys, since it does not exert any influence upon the circulation. He classes it with caffein, as he believes that caffein acts upon the kidneys only, and not through the circulation, as do digitalis and strophanthus.

Lactose is regarded as superior to caffein, as it does not affect the brain and nervous system. —*L'Union Médicale, American Journal of the Medical Sciences.*

EPILEPSY TREATED BY AMYL NITRITE.

Having read a few weeks ago in this journal Dr. Woods' treatment of epilepsy, and being called to a very severe fit in a young man who has been an epileptic from birth, and whose mind has been so impaired that, though 21 years old, he is unable to read, write, or dress himself, I determined to try amyl nitrite. After inhalation of one capsule, the convulsion ceased, and in about twenty minutes the patient was himself again, the insensibility which always followed the fits being almost nullified. Since then the drug has been tried four times, and each time with success; if administered at the commencement of the fit, the latter was aborted, and the insensibility almost completely prevented. This patient is in the habit of having, on an average, a fit daily; and frequently a succession of fits—status epilepticus. He has been a patient for years at the Epileptic Hospital, Queen Square, and has been taking bromides daily, but apparently with no effect. I hope soon to be able to give an account of the action of nitro-glycerin tablets, which he is at present tak-

ing, in the hope that they will render the fits less frequent.

I believe that hitherto the amyl nitrite has been used only in the status epilepticus, but it appears to me to be also useful in severe single fits. The *rationale* of its action has not, I think, been worked out, but obviously would seem to be due to its dilating influence on the cerebral arteries contracted during the convulsions.—J. P. PARKINSON, M.B., in the *British Med. Journal.*

THE DRINK QUESTION IN FRANCE.

The recent Anti-Alcohol Congress in Paris showed that the dram shops of Paris have risen since 1880 from 24,000 to 29,900. In thirty years the consumption of alcohol has been trebled, and as much as 36,000,000 galls. have been manufactured out of potatoes for the French market. This shows an average yearly consumption of over 12 quarts per adult man. The consumption of alcohol doubled between 1875 and 1885. The Congress voted a resolution that inebriates should be treated as mad, and that prison hospitals should be created for them. It was also resolved that the Governments of the world should be asked to impose a prohibitive duty on alcohol, and exempt from duty tea, coffee, and other ingredients for temperance drinks.

THE MILK OF TUBERCULOUS COWS.

At the Congress on Tuberculosis held in Paris in July, 1888, it was unanimously conceded that the milk of tuberculous cows was dangerous for use. Some held that it was only so when the udder was affected with tubercular disease; but as it is impossible for milkers and dairymen always to diagnose this, they unanimously recommended that all milk should be boiled. There was some difference of opinion as to the use of meat of tuberculous cows. Dr. Trocart held that if the disease is localized the flesh does not contain any bacilli. Dr. Arlving contended that in his experience virulent bacilli existed in the muscles of tubercularized animals in one-fifth of the cases. He desired to see tuberculosis inscribed among the infectious diseases, and thought the flesh of tuberculous animals should be prohibited as food till means were found to render it harmless. He suggested the creation of a permanent committee to carry out, in cities and towns, the realization of a complete sanitary organization. It was learned that in Paris, Brussels, Constantinople and other large cities the meat is condemned if the disease is generalized and the cattle emaciated. After a lengthened discussion, which brought out a great many interesting facts in relation to the etiology of tuberculosis and its communicability, the following resolution was voted upon and carried almost unanimously: "It is necessary to carry out, by all possible means, including indemnification of those interested, the general application of the principles of seizure and total destruction of all meat coming from tuberculous animals, whatever may be the gravity of specific lesions found in those animals." Chauveau, President of the Congress, suggested that simple instructions should be printed and widely distributed throughout the cities and towns and in the country, explaining the danger of drinking tuberculous milk and eating tuberculous meat, and the ways of rendering the meat inert. Though much has yet to be learned on this vital question, enough proof has already been adduced to warrant the adoption of active measures towards the extermination of tuberculous cattle. Is not the Government called upon to deal with tuberculosis as it does with pleuro-pneumonia?—*Montreal Medical Journal.*

TYPHOID FEVER—ANTIPYRIN RASH.

In the case of a girl of 25 years suffering from severe typhoid fever, with the temperature for several nights at 105°, antifebrin was given without marked effect, and subsequently antipyrin. The latter reduced the temperature for a time, but after two doses had been taken a rash broke out on the face and neck. It did not resemble urticaria or measles. The forehead became of a pale red color, like the skin of a newborn baby, and there was slight puffiness of the lids. On the neck the pale red patches were somewhat discrete. By next morning all the rash had disappeared. Antipyretics were abandoned, when, after two days, the temperature fell to 102° and 101°, and the symptoms improved. The action of antipyrin in producing rashes seems to be very common, though so far I have seen but these two cases. The journals contain many such records. The rashes are described as measly, erythematous, or urticarious.—MONTREAL HOSP. REP., *Montreal Med. Journal.*

INGESTION OF ASCITIC LIQUID.

Probably the most remarkable potation on record is that of an inmate of the hospital at Obernay, France, who, after being tapped for the fifty-third time, took advantage of an opportunity to drink off about eight ounces of the product of his own peritoneum, and with apparent relish. But what is more and stranger, his dropsy has not recurred within the year that has elapsed since he took the beverage, the œdema has been reduced, and he has been enabled to resume his employment. Dr. Duhamel is responsible for this narration in the *Gazette Médicale de Strasbourg.*

SOCIETY PROCEEDINGS.

Association of American Physicians.

Fourth Annual Meeting, held in the Army Medical Museum and Library, Washington, D. C., September 18, 19 and 20, 1889.

(*Concluded from p. 465.*)

DR. D. W. PRENTISS, of Washington, reported

A REMARKABLE CASE OF SLOW PULSE EXTENDING OVER A PERIOD OF NEARLY TWO YEARS.

G. W. P., white male, carpenter, æt. 54 years. Has always been healthy; the only illness he remembers is neuralgia of stomach fourteen years ago. The only injury ever received was a fall a distance of 15 feet and striking on his feet, when 19 years old. Ten years ago a brick fell upon his head, cutting the scalp but causing no serious injury. Never had any form of venereal disease. Always temperate in the use of alcohol but not in the use of tobacco. He has been under the observation of the writer for sixteen years, but had never been attended professionally until present illness.

December 13, 1887, after working some time in a malarial locality, he began to have weak spells, and several times fainted on lifting heavy weights. Examination showed no well-defined disease. No fever, mind clear, pulse 36 Urine normal. No organic disease of heart discovered, the systole was full and strong, diastole greatly prolonged. Between December 13, 1887, and January 20, 1888, the pulse ranged from 22 to 76. During this time there were frequent attacks of syncope. During one fainting attack he fell down stairs. At another time fell out of a chair, remaining unconscious about a minute. After January 20, his pulse had reached 76, he had no more fainting spells. In March he resumed work. October 2, 1888, he had a relapse with the same symptoms as in previous attack. From this date to April 15, 1889, the pulse ranged from 15 to 44 per minute. The fainting attacks continued throughout this time, occasionally very severe. He improved to a certain extent, but about August 29 he began to have a return of the old symptoms. During the fainting spells the pulse fell to 12 or 15°. Between August 5 and September 18, the pulse ranged between 12 and 38° per minute, and between August 10 and August 15, it did not rise above 14° per minute. The temperature during this time was between 94.5° and 97°. The patient improved somewhat after August 15 and September 18 was well enough to present himself for examination before the Association.

The "spells" referred to, were described. They came on without warning, often without apparent cause, sometimes often exhaustive. He faints, losing consciousness. They last from a few seconds to half an hour. Breathing gasping and slow. Face and hands, first pale, then dark and purplish. There is no pain. He has great confidence in the bromide of ammonium, which he thinks controls the attacks. The treatment of the case from the first has been rest in bed, tonics, stimulants, electricity and bromide of ammonium together with supporting diet. The tonics used were strychnia, opium and iron with belladonna. Digitalis was tried but made him worse. Nitroglycerine seemed to help for five doses, but later caused distress. Convallaria and strophanthus were tried with like result. The drug which appeared to give the most relief was bromide of ammonium, given in doses of 1 gram (15 grains) three times a day, and extra doses when paroxysms threatened.

The most interesting question in this case turns upon the pathology. What is the cause of the retarded action of the heart? The causes which may produce slow pulse may be classified as follows:

1. Disease or injury of the nerve centers, producing either irritation of the pneumogastric or paralysis of the sympathetic (acceleration) nerves of the heart.
2. Disease or injury of the pneumogastric nerve increasing its irritability.
3. Disease or injury of the symphathetic nerves of the heart—paralyzing them.
4. Disease of the cardiac ganglia by which the influence of the pneumogastric preponderates.
5. Disease of the heart muscle (degeneration) whereby it fails to respond to the normal stimulus.
6. Action of poisons, as of lead or tobacco, either on nerve endings or nerve centers.

In this case it is difficult to say to which of these divisions it belongs. There are no symptoms to indicate any form of disease of the nerve centers. There is no evidence of disease of the nerves themselves, nor has any organic disease of the heart been discovered. There is left only the action of certain poisons, and the question arises whether or not in some obscure way the conditions may not be due to tobacco poisoning from excessive smoking. Another possibility is malarial poisoning. The attacks first appeared while he was working in a malarial district, and in the summer of 1888 he had intermittent fever. These considerations make it probable that there is paralysis of the accelerator nerves and not an irritation of the vagus. The symptoms are due solely to defective circulation.

In many of the cases collected in connection with this report, the pathological appearances were a result of the slow pulse rather than a cause.

Abstracts were given of 55 cases of slow pulse

of which the following is a brief analysis as to causes: 1. Fracture or dislocation of cervical vertebræ, 9 cases. 2. Disease of brain, 9 cases. 3. Cerebral syphilis, 2 cases. 4. Sunstroke, 1 case. 5. Ossification of aorta valves and coronary arteries, 2 cases. 6. Starvation, exhaustion, loss of sleep, convalescense, 3 cases. 7. Epilepsy and epileptoid disease, 9 cases. 8. Heart disease, 6 cases. 9. Lead poisoning, poisoning by salt fish, pernicious fever, 3 cases. 10. Nervous shock, cholera morbus, 2 cases and 11, not stated, 9 cases.

THURSDAY—MORNING SESSION.

DR. FREDERICK P. HENRY, of Philadelphia, read a paper on the

RELATION BETWEEN CHLOROSIS, SIMPLE ANÆMIA AND PERNICIOUS ANÆMIA.

The discussion of the relation between chlorosis, simple anæmia, pernicious anæmia, etc., may be divided into three heads: 1. Are they separate diseases? 2. Are they of kindred nature? 3. Are they different stages of one affection? Pernicious anæmia is first considered, because the determination of its status is of fundamental importance. It is admitted by all that the clinical features of this disease are common to a number of affections, especially cancer and atrophy of gastric glands; but those who argue most forcibly in favor of its independent nature exclude from the category of pernicious anæmia all cases in which an anatomical lesion of any organ is found. This appears to me unscientific, for an independent disease is one which rests upon a constant anatomical basis or is invariably produced by the same specific agent. Hunter has endeavored to establish pernicious anæmia as an independent disease by the demonstration of an excess of iron in the liver in cases of that affection. He regards this as the essential anatomical feature of pernicious anæmia. The work of Hunter is of great value, and certainly demonstrates the existence of an excessive hæmolysis in that disease. In my opinion, however, this excessive hæmolysis is a consequence of defective hæmogenesis, for certain facts show the red corpuscles of pernicious anæmia to be abnormally weak and perishable. Chlorosis is universally admitted to be due to defective hæmogenesis, and, therefore, I regard it and pernicious anæmia as closely related affections. Transitions from the one affection to the other have also been observed by myself and others.

Conclusions: (1) That pernicious anæmia is a process, not a disease; (2) that it is closely related to chlorosis; (3) that it may be the terminal stage of other diseases, and especially of cancer of the stomach and atrophy of the gastric glands.

Leucocythæmia and Hodgkin's disease, in that they are always associated with lesions of the blood-making organs—spleen, lymph glands, bone marrow, etc.—are independent diseases, or rather, different stages of the same disease, for several cases are recorded in which an undoubted transition from one to the other has been observed.

DR. F. FORCHEIMER, of Cincinnati, read a paper on

THE RELATIONS OF ANÆMIA TO CHLOROSIS.

He referred to the confusion which existed in regard to the definition of the two diseases. Immermann says that we are justified in stating that anæmia is that condition in which there is a diminution of red corpuscles as well as of the albumens of the plasma in the blood (hypalbuminosis). Strümpell considers that "the essential element in anæmia is therefore a diminution in the number of red corpuscles or so-called oligocythæmia," and states further that "oligocythæmia is not invariably accompanied by a diminution in the amount of serum albumen (by which means plasma-hypalbuminosis)." Going on it is found that anæmia or oligæmia vera really means a diminution of the whole quantity of the blood, and that this condition can be divided into hydræmia, oligocythæmia, oligæmia sivea and oligæmia hypalbuminosa. We have three representative definitions; the one broad and general, including a diminution of any one or all of the constituents of the blood; a second, in which hypalbuminosis and oligocythæmia are the principal if not the only factors; and a third which makes oligocythæmia alone the characteristic feature. From a purely practical standpoint the latter seems the best.

The same confusion in regard to definition is met with in a consideration of chlorosis. Duncan (1867) was, however, probably the first to make the distinctive feature, oligochromæmia, characteristic for chlorosis—that is, in chlorosis we find the individual red corpuscle deficient in hæmoglobin. Unfortunately for this definition the term chlorosis is to be looked upon as an essentially clinical one; it is not going too far to state that by far the great majority of reported cases of chlorosis are not chlorosis at all. Another difficulty is that both oligocythæmia and oligochromæmia may occur in the same individual, so that the term chloranæmia is justified by observation of existing conditions. It is more than probable that anæmia is a forerunner of chlorosis in a great many instances, and possibly a number of cases occur in which there is a combination of both conditions.

Almost any cause put down for anæmia will hold good for chlorosis. Sex, age, a peculiar composition of the blood and certain vascular anomalies are held to be especially characteristic for chlorosis. The two latter are the only ones to be found in chlorosis. The process of sexual

development is looked to as the time of most common occurrence of chlorosis. This age also produces a great number of cases of anæmia, but children and old people are subject to anæmia and practically excluded from chlorosis. The greatest number of cases occur between the ages of 15 and 25 years, decidedly after the time of first menstruation. Furthermore, an anæmic constitution is a strong predisposing cause for chlorosis.

The clinical characteristic of chlorosis lies in the peculiar changes in the blood. In anæmia the red corpuscles as well as the albumens of the plasma are reduced in quantity, and frequently there is production of a greater number of smaller corpuscles (microcytes). As a result of the reduction of the number of red corpuscles the hæmoglobin is correspondingly reduced in quantity. In pure chlorosis the number of red corpuscles is not diminished and a tendency to the production of larger red corpuscles (megalocytes) is especially well marked. These changes are, however, not sufficiently characteristic to establish a diagnosis. It is also found that the proportion of hæmoglobin in each corpuscle is diminished. It has been said that in anæmia there is always hypalbuminosis, while in chlorosis this is absent, but this has not yet been positively proven.

One respect in which chlorosis is said to differ materially if not absolutely from anæmia consists in the pathological changes, first described by Virchow. These are narrowing of the lumen of the aorta and larger arteries as well as thinning of their walls. The heart is sometimes small, sometimes hypertrophied. This view would permit us to state that chlorosis is always congenital, in some cases latent for years, while anæmia in most cases is acquired. Many objections have been urged against this view.

The relation of the symptoms of anæmia to chlorosis depends upon the conditions of the blood and the anatomical substrata. Given a case of anæmia in which there is only a reduction of hæmoglobin as a result of oligocythæmia and a case of chlorosis in which there is a reduction of hæmoglobin as a result of oligochromæmia, and metabolism in both these cases will be approximately the same; but if in anæmia we have oligocythæmia as well as hypalbuminosis, which is said to coexist in the majority of cases, the metabolism must be different from that of a pure case of oligocythæmia. As a result of a reduction of hæmoglobin there is simply reduction in the process of oxidation; at the same time the waste products are carried off and sufficient albuminous food is carried to the tissues by the plasma of the blood, which is unchanged. Hypalbuminosis and oligocythæmia produce an entirely different result. We have the same factor, suboxidation, but we have in addition deficiency of supply. In mild cases of anæmia, there is produced a loss of weight; in severe cases, the condition called marasmus. In chlorosis very little if any loss of weight occurs; very frequently the opposite condition is brought about by too great supply and by the presence of too much CO_2, preventing decomposition of fats. When anæmia is associated with chlorosis, we have a very unfortunate combination, especially if there is a great amount of hypalbuminosis.

Unless we believe that the anatomical lesions of Virchow belong to chlorosis, there exists no difference between the symptoms of chlorosis and anæmia.

The therapeutic relations of the two diseases must be considered. While the indiscriminate use of iron in anæmia must be deprecated, yet upon the whole iron is just as much looked upon as a specific in anæmia as in chlorosis. Where in anæmia we try to remove the cause and institute causal treatment, we are satisfied in chlorosis with removing the symptom which is the essential of the disease. It has been repeatedly demonstrated that the removal of this essential symptom is followed temporarily by complete recovery. Whereas, in anæmia, treatment is followed by complete recovery or complete failure, iron in chlorosis will always result in amelioration, even if the tendency to relapse cannot be removed. There are few cases of chlorosis, even those with the lesions of Virchow, that are not benefited by the administration of iron in sufficient quantity. In a great many cases of anæmia, the use of iron would be followed by negative or by bad results.

Dr. William Osler, of Baltimore, took issue with Dr. Henry in regard to chlorosis. He held that chlorosis is absolutely distinct from pernicious anæmia, for the following reasons: 1. The sex; he had never seen chlorosis in the male. 2. The pathological conditions. He regarded thus the hyperplasia of the heart and great vessels as a specific anatomical distinction of a certain number of cases. 3. The character of the blood. He considered the diminution of the percentage of hæmoglobin a distinctive feature of chlorosis. 4. Curability. Although in chlorosis there is a tendency to relapse, each given attack can be cured if sufficiently large doses of iron are employed.

Dr. Francis P. Kinnicutt, of New York, agreed as to the lack of relation between chlorosis and pernicious anæmia. He had never seen true chlorosis in the male. All his cases of pernicious anæmia, on the other hand, with one or two exceptions, had occurred in males. He agreed with Dr. Henry in regard to the relationship between Hodgkin's disease and true leukæmia.

Dr. W. W. Johnston, of Washington, thought that a study of certain anæmias which are met with in women will throw light upon the association of anæmia with diseases of the intestinal glands and gastric tubules. The explanation of

the chronic anæmias of parturition is probably the continued pressure upon the intestinal tube, causing a long starvation lasting nearly a year. This seems to produce an actual organic change in the intestinal glands. Several illustrative cases were cited.

DR. WILLIAM PEPPER, of Philadelphia, agreed with Dr. Osler in regard to the relation between true anæmia and chlorosis and progressive pernicious anæmia, so called. He was not prepared to admit the analogy between true chlorosis and progressive pernicious anæmia. The conditions of the blood are widely antagonistic in these two affections. The clinical differences are also very marked. In the present state of knowledge it is probably wiser to consider essential anæmia as an independent affection.

DR. FREDERICK P. HENRY, of Philadelphia, thought that the definition of chlorosis given by Dr. Osler could not be maintained; that is, there is always a diminution of hæmoglobin, with a nearly normal number of red corpuscles. The arguments that he had advanced were based entirely upon personal observations. While chlorosis is readily relieved by treatment in the early stages, yet, if it is neglected, the chlorosis may become more intense and may present the appearances of pernicious anæmia.

DR. S. WEIR MITCHELL, of Philadelphia, read a paper on

SUBJECTIVE FALSE SENSATION OF COLD, CONSIDERED AS A SYMPTOM.

The speaker had met with many cases where a feeling of cold is complained of in members which do not present any objective changes in temperature. These may be placed in three classes: 1. Those due to a central cause. 2. Those due to neuritis. 3. Those whose origin is at present inexplicable or due to hysteria. A number of cases exhibiting this symptom to an extreme degree were reported. In the first case a marked sensation of cold involving the left side of the body followed an injury to the head. Three or four cases were referred to coming in the second class. The sensation of cold involved the posterior part of the legs, the back or buttocks. In all these cases there was either neuritis at the time or it developed subsequently. When this symptom is noted neuritis may be expected. Two cases belonging to the third group were described. One was an elderly individual with no signs of hysteria; the other was a case of young woman with marked hysterical symptoms.

DR. G. M. GARLAND, of Boston, read a paper on

GASTRIC NEURASTHENIA.

Three cases of vomitus nervosus were reported:

Case 1.—Miss S. began at the age of 2 years to have sudden attacks of vomiting. These recurred at irregular intervals until the time of her death. The attacks lasted twenty-four hours and it required a week for the child to recover her strength. At the age of 20 she began to have excessive muscular twitchings with the attacks. Two years later she began to have severe headaches. These gradually merged into one steady ache. January 2, 1884, the author saw the patient suffering from intense headache and slight twitching of arms and legs. Vomiting appeared the next day, causing intense burning of the throat from the intensely acid character of the matter vomited. After four days she gradually improved and entirely recovered. November 12, 1884, the patient was again seized with headache. November 15th vomiting and twitching began. She gradually improved until December 2d, when all the symptoms returned and continued until her death, December 13th. Urine was normal until a few days before death, when it contained a trace of albumin, but no casts. At the autopsy no marked organic change was found in any part of the body.

Case 2.—Miss S., 22 years old, first seen September 19, 1888. She was in bed with headache, poor appetite, constipation and weakness. Pulse, temperature and urine normal. Some nausea. Vomiting appeared in a few days. She was fed exclusively by the rectum for three weeks, but the vomiting persisted and there was severe burning along the entire œsophagus. At times the urine was scanty, but never contained albumen. She gradually improved, but is not as strong as before her illness.

Case 3.—Miss D., aged 43 years, had been subject to bilious headaches. During the summer of 1888 she had a severe attack of vomiting and she was very ill for several weeks. During the following September, as a result of anxiety, the appetite left her and the nausea returned. She, however, did not vomit.

AFTERNOON SESSION.

DR. JOHN H. MUSSER, of Philadelphia, read a paper on

PRIMARY CANCER OF THE GALL BLADDER AND DUCTS.

The speaker, after describing two cases of this affection that had come under his observation, reviewed the cases that had been reported and presented the following conclusions:

Primary cancer of the gall bladder is not so rare as is generally believed. It occurs in the female nearly three times as often as in the male. A large number (57 per cent.) of the cases occur under the age of 60. Gall stones are an exciting cause, especially in persons predisposed to the affection. The organ is generally not much enlarged save as the result of secondary processes. Metastasis is not widespread. By continuity of structure neighboring organs are involved. Ad-

hesions to adjacent organs with ulceration and perforation are not uncommon. Pain, jaundice and the presence of a tumor are the most common phenomena. With them are associated anæmia, cachexia, vomiting, constipation or diarrhœa and ascites. Pain was present in 62 per cent. of the cases, at first ill-defined, then becoming localized to the right hypochondrium and lancinating in character. Jaundice was present in 69 per cent., gradually increasing in degree. In some cases, however, it was intermittent. Tumor was noted in 63 per cent. The tumor was hard, firm, painful, and generally movable with respiration. The progress of the disease is always continuous. Some extraordinary cases are reported in which there was temporary cessation in the progress of the disease. Death results from exhaustion; frequently from peritonitis. In some cases from metastasis to other organs; in some from biliary obstruction. In eight cases death was due to cholæmia. The duration of the disease is short, the average being six and two-thirds months. The progress is rapid after complete occlusion of the biliary passages or evidence of inflammation of the biliary passages has developed.

Dr. Henry Formad, of Philadelphia, read a paper on *The Anatomical and Physiological Relations of Lesions of the Heart and Kidneys.* The paper was based upon the post-mortem study of 300 cases observed in public and private practice.

Dr. P. G. Robinson, of St. Louis, read a paper on

THE CONTAGIUM OF DIPHTHERIA.

Diphtheria is an acute infectious disease, doubtless due to a living organism (microbe) the exact identity of which cannot yet be regarded as settled.

Primarily a local affection, the system becomes secondarily and generally infected through absorption of a poison generated at the primary and localized seat of inoculation.

The modes of infection are numerous, the contagium being directly transferred by contact, in a dry state through the air for limited distances, in foul clothing, in polluted food and drink, milk probably being a prolific source of infection.

The most difficult problem to solve is that which relates to the conditions most favorable to the growth and development of the germs and the propagation of the disease.

While, strictly speaking, diphtheria can hardly be called a filth disease, since it prevails often to a very limited extent in those localities whose hygienic surroundings are apparently the worst, yet certain kinds of filthy accumulations, as the ordure of animals, notably the refuse from cowsheds and dairies, seem to furnish the most favorable conditions for the culture of this particular germ.

Until this problem can be solved and the life history and habitat of the diphtheritic germ is understood, no definite plan can be formulated for the arrest of the contagium nor for the hopeful treatment of the disease.

Friday Morning.

The following officers were elected: President, Dr. S. C. Busey, Washington; 1st Vice-President, Dr. Wm. Pepper, Philadelphia; 2nd Vice-President, Dr. Henry M. Lyman, Chicago; Recorder, Dr. I. Minis Hays, Philadelphia; Secretary, Dr. Henry Hun, Albany; Treasurer, Dr. W. W. Johnston, Washington; Member of Council, Dr. G. Baumgarten, St. Louis; Representative on Executive Committee of Congress of American Physicians and Surgeons, Dr. Wm. Pepper, Philadelphia.

The following members were elected: Drs. Wm. G. Thompson, Wm. H. Thomson, J. West Roosevelt, New York; Charles Carey, Charles G. Stockton, Buffalo; Victor C. Vaughn, Heneage Gibbes, Ann Arbor; Charles W. Purdy, Chicago; Starling Loving, Columbus, O.; W. H. Geddings, Aikens, S. C.; Wm. C. Dabney, Charlottesville, Va.; B. F. Westbrook, Brooklyn, and Henry P. Walcott, Cambridge, Mass.

The date of the next meeting to be between May 20 and June 15, 1890.

Dr. James J. Putnam, of Boston, read a paper entitled

A SUPPLEMENTARY INQUIRY INTO THE FREQUENCY WITH WHICH LEAD IS FOUND IN THE URINE.

The paper embodied further researches as to the frequency with which traces of lead are found in the urine of persons in good health, or not presenting the classical symptoms of lead poisoning; and discussed the propriety of enlarging our clinical conception of that disease. A table was shown in which the results of the present investigation were combined with those reported upon two years ago, which may be summarized as follows: The urines of 68 persons, either presenting no symptoms (healthy medical students) or only symptoms of specific or local disease (phthisis, pleurisy, local injuries, etc.) were found by Dr. A. M. Comey and Dr. C. R. Worcester, to contain lead in the proportion of about 17 per cent.; while those of another group of 125 persons, presenting various symptoms of disease, such as it was thought might possibly be due in part to lead poisoning, contained lead in the proportion of 50 per cent. The largest subgroup of this latter class embraced 36 cases, not strictly homogeneous, but made up of chronic or sub-chronic affections of the spinal cord and peripheral nerves. One (typical) fatal case of this sub-group was analyzed at some length, and the results of the microscopic examination of the spinal cord and nerves were reported upon. The case was that of a carriage painter, who suffered for some years with progressive anæmia and general emaciation, and for the two years preceding his

death with weakness, paræsthesia and impairment of sensibility with exaggerated tendon reflexes and extensor spasms, increasing finally to complete paraplegia. Lead had been found in the urine three times, but the patient had never presented "a blue line," characteristic of paralysis, encephalopathic symptoms, or colic, though the bowels had been obstinately constipated for years. The morbid changes found after death, besides the signs of general anæmia, were those of combined antero-posterior and lateral sclerosis of the cord, on which at the last, a subacute process of diffuse destructive softening had engrafted itself.

This latter process, which was characterized by the presence of a dense infiltration of granule cells and by a breaking down of the nerve tubes, so as to form round or oval cavities, such as have often been described, extended throughout the length of the cord, occupying the position of the sclerosed system traits of the adjoining tissue. The nerve roots were effected though to a less degree than the cord; the posterior much more than the anterior. The acuter process was at its height in the dorsal region. The gray matter was also affected, apparently in proportion to the severity of the secondary acute change, *i. e.*, most severely in the dorsal region. The smaller arteries were here and there thickened. The peripheral nerves were degenerated, but only to a moderate degree.

It was not assumed that these changes in the cord were due to lead as a specific poison, though at the same time the evidence is that such myelitic changes as lead does set up are diffuse in character and not coördinated with the typical peripheral nerve degeneration. It was, however, thought more probable, in view of the circumstances under which such pathological processes had been seen in other cases, that the lead acted, if at all, by inducing a general and—through the thickening of the vessels—a local anæmia, thus intensifying the effects of other influences, of which one might be an hereditary tendency.

Another case was cited to show that lead in drinking water may cause outbreaks of acute indigestion in children, while other children exposed to the same influence may be wholly unaffected.

A number of observations made on Boston drinking water by Dr. E. M. Greene were reported, showing the frequency with which lead is present and the length of time required to wholly rid a pipe of its presence.

DR. HAROLD C. ERNST, of Jamaica Plains, Mass., read a paper entitled

HOW FAR MAY A COW BE TUBERCULOUS BEFORE THE MILK BECOMES DANGEROUS AS A FOOD SUPPLY?

The observations which he reported were made at the instance of the Massachusetts Society for the Promotion of Agriculture. The surroundings of the animals used were prepared in the most careful manner. One hundred and fourteen samples of milk were examined for the bacillus. These were obtained from thirty-six cows suffering with tuberculosis of some organ other than the udder. Seventeen samples were found to contain tubercle bacilli. These seventeen specimens came from ten cows. The cream was found to contain bacilli as often as the milk. The bacilli were present with a fair degree of constancy.

Well animals were then inoculated with the result of inducing the disease in 50 per cent. of the cases treated. Feeding experiments were also made with the result of inducing the disease in a number of calves and young pigs. The following conclusions were presented: 1, and emphatically, that milk from cows affected with tuberculosis in any part of the body may contain the virus of the disease. 2. That the virus is present whether there is disease of the udder or not. 3. That there is no ground for the assertion that there must be a lesion of the udder before the milk can contain the infection of tuberculosis. 4. That, on the contrary, the bacilli of tuberculosis are present and active in a very large proportion of cases in the milk of cows affected with tuberculosis, but with no discoverable lesion of the udder.

DR. E. L. TRUDEAU, of Saranac Lake, read a paper on

HOT AIR INHALATIONS IN PULMONARY TUBERCULOSIS.

The paper presented a brief clinical history of four cases treated during periods varying from one to four months by Weigert's method. This was considered as secondary and only as a basis for the bacteriological study which is left to answer the claim of specificity made for the method. The question to be answered is whether breathing of hot air can prevent the growth of the tubercle bacillus in the lungs of living individuals. The clinical evidence obtained brings out no positive proof in favor of the treatment. From the bacteriological research the following notes are made: In all the cases the bacillus which was present before the treatment remained in the sputum, and no effect was produced upon that important element of the disease. The claim of diminished virulence was tested by inoculations made on rabbits before, during and after the treatment. The sputum of one of the patients who improved was found, fifteen weeks after the uninterrupted daily breathing of hot air, to produce tuberculosis in the animals injected as promptly, and to a similar extent, as that injected before the treatment had been instituted.

Conclusions:—1. The therapeutic value of hot air inhalations in phthisis is doubtful. 2. The evidence obtained by bacteriological study of the

cases recorded does not confirm the assumption that inhalations of heated air can either prevent the growth of the tubercle bacillus in the lungs of living individuals, or diminish the virulence of this microbe when it has gained access to them.

NECROLOGY.

Dr. Addinell Hewson.

DR. ADDINELL HEWSON, of Philadelphia, a member of the Association in 1855, died September 11, in his 66th year. He was descended by a medical line of ancestry, being the fourth in descent from an eminent London surgeon. He was carefully educated at home, and at Dublin, after taking his medical degree at Jefferson College, which was in 1850. He was eminent in surgery as well as editorial and literary work. He was appointed visiting surgeon to the Pennsylvania hospital in 1861.

Ex-Surgeon General Joseph Beale.

EX-SURGEON GENERAL JOSEPH BEALE, with relative rank of Commodore U. S. N., died on the 24th ult., at his residence in Philadelphia. Dr. Beale was born December 30, 1814, and received his classical and medical education in the University of Pennsylvania, from which institution he graduated in 1836. He practiced his profession for one year, at the end of which period he entered the United States navy as Assistant Surgeon, and afterward rose to the position of Surgeon General of the navy, to which he was appointed in December, 1873. He was placed on the retired list in 1876.

Dr. S. O. Habershon.

DR. S. O. HABERSHON, the well-known English medical author, died in London, on the 22d ult., at the age of 64 years. His books on the diseases of the abdomen, passed through several editions, of which two appeared in this country. He was senior physician to Guy's hospital. He was a philanthropist and prominent in religious undertakings.

Deaths of Eminent Foreign Medical Men.

The Lancet announces the death of the following eminent foreign medical men: Dr. Jacobson, professor of chemistry in the University of Rostock; Dr. Anthon Geuter, professor of chemistry in the University of Jena; Dr. Anton Nuhn, honorary professor of anatomy in the University of Heidelberg; Dr. Josey Tieftrunk, of Prague, formerly body physician to the Emperor of Austria; Dr. Franz Hellwig, the botanist attached to the German New Guinea expedition, and Dr. Wasseige, professor of midwifery in the University of Liege.

MISCELLANY.

THE AMERICAN PUBLIC HEALTH ASSOCIATION.—We again call attention to the meeting of this Association, which will convene at Brooklyn Institute, Washington and Concord streets, Brooklyn, October 22, 23, 24, 25. Hon. Alfred C. Chapin, Mayor, will deliver the Address of Welcome on behalf of the city. That on behalf of the medical profession will be delivered by Dr. Alexander Hutchins. The topics to be considered are as follows:

1. The Causes and Prevention of Infant Mortality.
2. Railway Sanitation (heating, ventilation, water supply, water-closets, carrying of passengers with infectious diseases).
3. Steam-ship Sanitation.
4. Methods of Scientific Cooking.
5. Yellow Fever (unprotected avenues, local protection, the proper procedure of local health authorities in case of an outbreak of yellow fever).
6. The Prevention and Restriction of Tuberculosis in Man.
7. Methods of Prevention of Diphtheria, with Results of such Methods.
8. How far should Health Authorities be Permitted to Apply known Preventive Methods for the Control of Diphtheria?
9. Compulsory Vaccination.
10. Sanitation of Asylums, Jails and other Eleemosynary Institutions.

THE INTERNATIONAL DENTAL CONGRESS.—Drs. E. B. Ward and J. A. Swasey, delegates from Chicago to the International Dental Congress at Paris, have returned, and say it is a certainty that the meeting of the Congress in 1892 will be held in Chicago. A letter from Mayor Cregier inviting the Congress to come to Chicago, and one from Ferd Peck, tendering the auditorium hall, were presented to the Congress and met a cordial reception, particularly from the French delegates. Dr. Ward says the belief was quite general among the delegates that the world's fair would be held in Chicago in 1892, and they favored holding the International Dental Congress here at the same time.

GERMAN CODE OF ETHICS.—At the seventeenth Congress of German physicians held recently at Brunswick, the following resolutions were passed:

1. Every kind of public laudation, whether it proceeds from the physician in question himself or from others, and continued advertising in public papers are to be reprobated.
2. The designation "specialist," for puffing purposes, is to be reprobated.
3. The public offering of medical assistance gratis, underbidding in concluding contracts in sick societies and the like, offering advantages of any kind to a third person in order to procure practice, are inadmissible. The designations "klinik" and "poliklinik" (hospital) belong exclusively to institutions which serve the purpose of instruction in connection with universities.
4. The ordering and recommending of secret remedies are inadmissible.
5. Any attempt of any kind on the part of a physician to intrude upon the practice of another is dishonorable, especially in the case of one who has acted as substitute or in consultation. A practitioner must by no means undertake the treatment of a case without the ex-

press consent of the previous physician. A specialist called in for a definite part of the treatment must strictly confine himself to that.

6. No physician is at liberty to make disparaging remarks to others about another physician.

TRI-STATE MEDICAL ASSOCIATION.—The following papers have been promised for the meeting of the Tri-State Medical Association:

"Demonstrations with the Microscope," Prof. James A. Reeves, Chattanooga. "Stricture," Prof. Daniel H. Howell, Atlanta, Ga. "A Case of Typhoid Fever with Subnormal Temperature and Subnormal Pulse," Dr. A. S. Wiltse, Kismet, Tenn. "A Plea for the Medical Education of Females," Dr. Chas. P. Gordon, Dalton, Ga. "Choleo-Cystotomy, with a Case," Dr. E. E. Kerr, Chattanooga. Report of a Case, Dr. Wm. T. Blackford, Graysville, Ga. "Physiology of the Heart and its Valves," Dr. W. L. Gahagan, Chattanooga. "Relation of the Specialist to the General Practitioner," Dr. F. W. Skillern, Pikeville, Tenn. "Some Points in the Diagnosis of Skin Diseases," Prof. E. A. Cobleigh, Chattanooga. "Imaginary Foreign Bodies in the Throat," Dr. Max Thorner, Cincinnati, O. "Antiseptic Midwifery," Prof. F. W. McRae, Atlanta, Ga. Other papers of interest will be presented.

Prof. Robert Battey, of Rome, Ga., has promised to be present.

This meeting will be held in response to the following call issued by a number of societies in Alabama, Georgia and Tennessee:

"The members of the medical profession in Alabama, Georgia and Tennessee are requested to meet in Chattanooga on the third Tuesday in October, for the purpose of forming a Tri-State Medical Association. All will be admitted to the meeting of the Association, but the membership will be restricted to graduates of regular medical colleges in good standing."

A Constitution will be adopted at this meeting which will regulate all matters pertaining to the society. The meeting will be called to order at 10 A.M. Tuesday, Oct. 15th, at the Chamber of Commerce. The sessions will continue two days.

FRANK TRESTER SMITH, M.D.,
Secretary of Committee.

IS LEPROSY HEREDITARY?—ORTMANN (*Archiv f. Derm. und Syph.*) gives a concise abstract of a paper by Dr. Amauer Hansen, in which the author gives the result of an interesting investigation. He went to America to visit the lepers who had emigrated from Norway, and examined in the States of Wisconsin, Minnesota and Dakota lepers who had originally left Norway and their descendants born in America. He arrived at the interesting result that of 160 lepers who had emigrated to America, the offspring had remained free to the third generation. This result shows emphatically that leprosy is not a hereditary disease. The fact that, of the 160 emigrants, only sixteen or seventeen are still alive without any new case having sprung up does not, in his view, show that leprosy is not contagious. The different mode of life in the new country does not afford the same opportunity of contagion that is given by the peculiar conditions of life in Norway.

LETTERS RECEIVED.

Dr. Dudley P. Allen, Cleveland, O.; Dr. Geo. E. Fell, Buffalo, N. Y.; Dr. Perry H. Millard, St. Paul, Minn.; Druggists' Directory, Boston; Dr. I. W. M. Gartury, Stockton, Cal.; Ketteridge & Moran, Ann Arbor, Mich.; Dr. Edward F. Wells, Shelbyville, Ind.; Dr. H. C. Jones, Maroa, Ill.; Dr. John M. West, Philadelphia; Woman's Medical College, Dr. C. H. Knight, New York; Dr. J. W. Selman, Greenfield, Ind.; Dr. O. E. Abel, Winchester, Ind.; Dr. M. H. Fletcher, Cincinnati, O.; W. P. Cleary, New York; Reed & Carnrick, New York; Dr. J. H. Bryan, Washington; Dr. M. G. Kolb, Cleveland, O.; Dr. G. B. French, Cedar Rapids, Ia.; Dr. F. A. Weir, Jesup, Ia.; Dr. E. A. Holmes, North St. Paul, Minn.; Dr. C. A. Freeman, Chicago; Dr. Robert T. Morris, New York; Cincinnati Polyclinic, Cincinnati, O.; Dr. J. A. Larrabee, Louisville, Ky.; S. H. Parvin's Sons, Cincinnati, O.; Battle & Co., St. Louis, Mo.; Dr. A. K. Harrison, Columbus, Tex.; Dr. Arthur B. Coffin, Boston; Dr. J. H. Davisson, Los Angeles, Cal.; Dr. A. L. Hummel, Philadelphia; Dr. Wm. B. Atkinson, Philadelphia; Dr. Chas. C. Browning, Adrian, Ill.; Dr. Richard J. Dunglison, Philadelphia; Dr. H. D. Nicoll, New York; The Bancroft Co., San Francisco, Cal.; Hammond Typewriter Co., New York; Dr. John A. Robison, Chicago; J. Walter Thompson, New York; Albany Medical College, Albany, N. Y.; Bellevue Hospital Medical College, New York; Surgeon-General John B. Hamilton, Washington; Geo. P. Rowell & Co., New York; Dr. E. R. Palmer, Louisville, Ky.; Dr. E. G. Cochran, Chihuahua, Mexico; Dr. E. von Denhoff, Louisville, Ky.; Dr. F. Koeller, Pittsburgh, Pa.; Dr. A. E. Prince, Jacksonville, Ill.; Niagara University, Buffalo, N. Y.; Dr. C. C. Hunt, Dixon, Ill.; College of Physicians and Surgeons, Chicago; J. H. Chambers & Co., St. Louis, Mo.; J. H. Bates, New York; Prof. Dr. H. Dor, Lyons, France; Dr. A. Hanson, Paulina, Ia.; Miss N. J. Newcomer, Indianapolis, Ind.; Dr. Jesse Hawes, Greely, Col.; Dr. John M. West, Philadelphia; Dr. Chas. T. Disen, Minneapolis, Minn.; Dr. A. H. Hunt, Wooster, O.; Ward Bros., Jacksonville, Ill.; Dr. Ed. A. Pennock, Chartram, Pa.; Thos. Leeming & Co., New York; Dr. A. Vander Veer, Albany, N. Y.; Dr. Frank Trester Smith, Chattanooga, Tenn.; Miner & Elberg, Indianapolis, Ind.; Dauchy & Co., New York; Dr. C. F. Folley, Breckenridge, Minn.; Dr. C. L. Ford, Ann Arbor, Mich.; Dr. Thos. W. Kay, Scranton, Pa.

Official List of Changes in the Stations and Duties of Officers Serving in the Medical Department, U. S. Army, from September 21, 1889, to September 27, 1889.

By direction of the acting Secretary of War, Major Geo. M. Sternberg, Surgeon, having completed the duties assigned him in War Department order dated February 4, 1889, S. O. 30, February 5, A. G. O., is reassigned to duty as attending surgeon and examiner of recruits at Baltimore, Md. Par. 12, S. O. 218, A. G. O., September 19, 1889.

By direction of the Secretary of War, the station of Major Leonard Y. Loring, Surgeon, is changed from Ft. Mojave, Ariz. Ter., to Ft. Wingate, N. M., and he will report for duty at the latter accordingly. Par. 7, S. O. 219, A. G. O., September 20, 1889.

By direction of the Secretary of War, Capt. Henry G. Burton, Asst. Surgeon, will report in person, on the expiration of his present sick leave of absence, to the commanding officer, David's Island, New York for temporary duty at that station, and by letter to the Superintendent recruiting service. Par. 3, S. O. 223, A. G. O., Washington, September 25, 1889.

Official List of Changes in the Medical Corps of the U. S. Navy for the Week Ending September 28, 1889.

Medical Director A. C. Gorgas, detached from examining board and to hospital, Philadelphia, Pa.

Medical Director W. T. Hord, detached from hospital, Philadelphia, Pa., and wait orders.

Medical Inspector E. S. Bogert, detached from Newport Navy Yard and to examining board.

Surgeon D. McMurtrie, detached from U. S. S. "Vermont" and to Navy Yard, New York.

Surgeon H. J. Babin, ordered to the receiving ship "Vermont."

P. A. Surgeon C. H. H. Hall, resigned from the naval service, to take effect November 1, 1890, and resignation so accepted.